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WEATHER BUREAU . . . F. W. Reichelderfer, *Chief*

MONTHLY WEATHER REVIEW

AUGUST 1945

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CORRECTIONS

MONTHLY WEATHER REVIEW, June 1945, vol. 73, page 106, last storm listed for 23d: "West Virginia, north and north-central portions, etc." should be deleted since this storm was printed in June 1944. Page 110: Hooppole, Ill., on the 27th; last sentence under Remarks, should read, "46 persons were injured," instead of killed.

MONTHLY WEATHER REVIEW

Acting Editor, Robert N. Culnan

Vol. 73, No. 8
W. B. No. 1444

AUGUST 1945

Closed October 5, 1945
Issued November 5, 1945

METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR AUGUST 1945

AEROLOGICAL OBSERVATIONS

TABLE 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during August 1945

STATIONS AND ELEVATIONS IN METERS ABOVE SEA LEVEL

Altitude (meters) m. s. l.	Albany, N. Y. (93 m.)			Albuquerque, N. Mex. (1,620 m.)			Apalachicola, Fla. (5 m.)			Atlanta, Ga. (300 m.)			Big Spring, Tex. (774 m.)			Bismarck, N. Dak. (505 m.)			Boise, Idaho (868 m.)									
	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity				
Surface	31	1,005	18.5	82	31	840	25.8	42	31	1,015	26.3	86	31	983	23.6	81	31	927	28.0	50	28	956	20.3	63	31	913	25.0	31
500	31	958	18.4	73	31	799	25.8	31	31	960	24.2	77	31	961	24.1	73	31	903	26.9	48	28	903	20.4	49	31	896	26.3	24
1,000	31	904	15.5	72	31	749	20.2	43	31	907	21.2	74	31	907	21.3	72	31	854	23.4	49	28	852	17.0	51	31	849	23.6	24
1,500	31	852	12.4	71	31	699	16.2	48	31	855	18.0	73	31	856	17.9	72	31	803	19.2	53	28	803	13.8	54	31	801	19.7	24
2,000	31	802	9.6	71	31	649	13.8	43	31	806	15.1	67	31	807	15.1	64	31	756	15.1	57	28	756	10.8	53	31	756	15.5	24
2,500	31	755	7.2	61	31	599	11.2	43	31	760	12.3	63	31	761	12.3	58	31	706	12.3	50	31	706	8.8	50	31	706	11.4	28
3,000	31	710	4.3	58	31	559	8.8	43	31	716	9.8	60	31	717	9.4	54	31	661	11.5	56	38	712	7.8	50	31	712	11.4	28
4,000	31	628	-1.3	57	31	478	5.2	43	31	634	4.4	55	30	635	4.1	52	31	634	5.6	47	28	630	1.7	46	31	631	3.1	35
5,000	31	553	-7.0	49	31	403	2.2	43	30	560	-0.9	48	30	560	-1.4	47	31	561	-0.3	46	27	556	-4.6	43	31	557	-4.6	40
6,000	31	486	-13.0	46	31	336	-0.1	43	30	494	-6.6	48	30	494	-7.2	46	31	494	-5.6	34	25	489	-11.3	33	31	489	-11.5	37
7,000	30	426	-19.3	46	31	276	-11.2	47	30	434	-12.7	45	30	434	-13.3	46	30	435	-11.7	25	25	428	-18.3	33	31	429	-18.4	37
8,000	30	372	-26.5	30	30	382	-17.4	47	30	380	-19.4	42	30	380	-20.0	45	28	381	-18.5	24	374	-25.8	33	31	375	-25.4	37	
9,000	30	323	-33.7	30	30	333	-24.3	30	30	331	-26.5	29	30	331	-27.0	28	28	332	-25.5	24	324	-32.9	31	31	326	-32.3	37	
10,000	30	279	-40.6	29	29	290	-31.6	29	29	288	-34.0	29	29	289	-34.1	27	289	-32.6	22	281	-39.9	31	282	-38.9	31	282	-38.9	37
11,000	30	241	-47.1	29	29	251	-39.3	29	29	249	-41.9	29	29	249	-41.6	25	250	-40.2	22	242	-46.2	31	243	-44.6	31	243	-44.6	37
12,000	29	206	-52.0	29	29	217	-47.0	29	29	214	-49.8	29	29	214	-48.7	24	216	-47.7	22	208	-51.4	29	209	-49.7	29	209	-49.7	37
13,000	27	177	-55.3	28	28	186	-54.6	28	28	184	-57.4	29	28	185	-55.6	24	185	-55.1	20	178	-54.6	29	179	-54.3	29	179	-54.3	37
14,000	25	151	-58.6	24	24	158	-61.7	25	25	156	-64.1	28	25	156	-62.0	20	158	-62.2	19	152	-68.7	27	153	-67.9	27	153	-67.9	37
15,000	20	128	-62.6	15	15	135	-67.9	20	20	132	-68.3	23	23	133	-68.7	14	134	-68.8	14	129	-61.5	27	130	-61.0	27	130	-61.0	37
16,000	17	109	-69.3	10	10	114	-72.8	13	13	112	-70.3	13	13	113	-68.9	9	110	-61.6	9	110	-61.6	12	111	-61.3	12	111	-61.3	37
17,000	10	93	-72.4	7	7	89	-76.7	7	7	89	-76.7	7	7	95	-69.3	6	94	-70.3	6	94	-70.3	7	94	-69.7	7	94	-69.7	37
18,000	9	79	-75.8	7	7	79	-76.7	7	7	80	-68.5	7	7	95	-65.9	6	94	-70.3	6	94	-70.3	7	94	-69.7	7	94	-69.7	37
19,000	7	67	-77.4	7	7	67	-77.4	7	7	80	-68.5	7	7	95	-65.9	6	94	-70.3	6	94	-70.3	7	94	-69.7	7	94	-69.7	37

Altitude (meters) m. s. l.	Brownsville, Tex. (6 m.)			Buffalo, N. Y. (221 m.)			Burrwood, La. (2 m.)			Caribou, Maine (193 m.)			Charleston, S. C. (14 m.)			Clovis, N. Mex. (1,306 m.)			Denver, Colo. (1,616 m.)									
	Number of servations	Pressure	Temperature	Number of servations	Pressure	Temperature	Number of servations	Pressure	Temperature	Number of servations	Pressure	Temperature	Number of servations	Pressure	Temperature	Number of servations	Pressure	Temperature	Number of servations	Pressure	Temperature							
Surface	31	1,012	27.0	84	30	991	19.3	76	21	1,015	26.9	85	31	992	16.4	81	31	1,015	23.6	92	31	870	24.2	55	31	842	20.0	6
500	31	957	24.2	77	30	960	24.3	79	31	960	24.3	79	31	957	17.7	68	31	961	23.4	77	31	816	20.0	51	31	801	19.7	24
1,000	31	904	21.9	66	30	905	16.9	68	21	906	21.3	75	31	902	15.0	69	31	908	20.6	73	31	766	17.7	49	31	766	17.7	24
1,500	31	853	19.6	60	30	853	13.6	68	21	855	18.3	69	31	850	11.7	72	31	856	18.1	68	31	716	15.5	51	31	716	15.5	51
2,000	31	804	16.6	58	30	804	10.6	61	21	806	15.8	65	31	800	8.4	73	31	807	15.4	66	31	666	13.3	46	31	666	13.3	46
2,500	31	758	13.7	56	30	757	8.1	54	21	760	13.2	60	31	754	5.4	67	31	761	12.6	65	31	616	11.1	46	31	616	11.1	46
3,000	31	714	10.4	55	30	712	5.4	53	21	716	10.5	59	31	708	2.7	61	31	717	9.9	63	31	566	8.9	46	31	566	8.9	46
4,000	30	633	4.6	51	29	629	0.0	45	21	635	5.0	56	31	626	-2.5	53	31	635	4.5	58	31	516	6.7	46	31	516	6.7	46
5,000	30	559	-1.2	52	27	555	-5.4	38	21	561	-0.7	51	30	551	-8.2	45	31	561	-1.0	55	31	466	4.5	46	31	466	4.5	46
6,000	30	492	-7.1	52	26	488	-11.6	38	21	494	-6.4	53	30	484	-14.5	39	31	494	-6.5	46	30	416	2.3	46	30	416	2.3	46
7,000	30	433	-12.9	50	25	428	-18.2	38	21	434	-12.7	51	30	423	-21.7	39	30	434	-12.6	45	29	366	0.1	46	29	366	0.1	46
8,000	28	379	-19.6	44	25	374	-25.3	38	21	380	-19.6	55	30	368	-28.8	38	27	380	-19.4	48	29	316	-1.9	46	29	316	-1.9	46
9,000	26	330	-26.9	25	324	-32.6	38	21	332	-26.1	55	29	319	-36.4	38	26	332	-26.7	48	29	266	-5.7	46	29	266	-5.7	46	
10,000	26	287	-34.6	23	282	-39.8	38	19	289	-33.5	55	29	276	-43.6	38	26	288	-34.3	48	29	216	-13.5	46	29	216	-13.5	46	
11,000	26	248	-42.4	21	242	-47.2	38	17	249	-41.5	55	29	237	-50.5	38	26	249	-42.4	48	29	166	-21.3	46	29	166	-21.3	46	
12,000	25	213	-50.3	18	208	-52.7	38	17	215	-49.3	55	28	204	-57.1	38	25	214	-50.1	48	29	116	-29.1	46	29	116	-29.1	46	
13,000	24	182	-57.6	18	177	-56.0	38	17	184	-57.2	55	27	174	-64.4	38	24	183	-57.9	48	28	66	-36.9	46	28	66	-36.9	46	
14,000	24	156	-64.2	13	152	-67.7	38	16	156	-64.4	55	25	148	-71.6	38	24	156	-64.2	48	26	16	-44.7	46	26	16	-44.7	46	
15,000	17	132	-68.5	7	128	-67.4	38	13	132	-68.9	55	21	127	-78.8	38	18	132	-68.6	48	16	13	-52.1	46	16	13	-52.1	46	
16,000	11	112	-72.4	6	110	-69.1	38	13	112	-70.3	55	12	109	-85.2	38	10	112	-70.2	48	6	11	-60.0	46	10	11	-60.0	46	
17,000												8	93	-87.0	38	7	95	-70.3	48					7	95	-70.3	48	
18,000												5	79	-86.1	38				48									

Altitude (meters) m. s. l.	Dodge City, Kans. (787 m.)			El Paso, Tex. (1,195 m.)			Ely, Nev. (1,908 m.)			Fort Worth, Tex. (211 m.)			Glasgow, Mont. (648 m.)			Grand Junction, Colo. (1,414 m.)			Great Falls, Mont. (1,128 m.)		
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TABLE 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during August 1945—Continued

Altitude (meters) m. s. l.	Greensboro, N. C. (273 m.)				Hatteras, N. C. (3 m.)				Havana, Cuba ¹ (51 m.)				Huntington, W. Va. (172 m.)				International Falls, Minn. (343 m.)				Jackson, Miss. (97 m.)				Joliet, Ill. (178 m.)				
	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	
Surface	31	996	21.4	85	28	1,017	23.8	87	---	---	---	---	29	997	20.1	85	31	974	16.8	79	29	1,004	25.1	84	31	996	19.2	83	
500	31	961	22.2	78	28	962	21.7	79	---	---	---	---	29	961	23.0	67	31	957	18.1	70	29	959	24.8	74	31	960	20.9	69	
1,000	31	907	19.6	73	28	908	19.1	69	---	---	---	---	29	907	20.2	66	31	902	16.0	63	29	906	21.6	73	31	906	18.0	66	
1,500	31	856	16.7	69	28	856	16.4	66	---	---	---	---	29	855	16.9	66	31	850	12.5	62	29	855	18.2	72	31	854	15.1	63	
2,000	31	806	13.5	68	28	806	13.6	66	---	---	---	---	29	806	13.5	65	31	801	9.4	60	29	806	15.4	63	31	804	12.5	57	
2,500	31	760	10.2	67	28	760	11.0	59	---	---	---	---	29	760	10.8	57	31	754	6.6	54	29	760	13.0	55	31	758	10.3	46	
3,000	31	715	7.3	61	28	716	8.2	58	---	---	---	---	29	715	8.0	53	31	709	4.0	51	29	716	10.2	55	31	713	7.7	39	
4,000	31	633	2.1	55	28	634	2.7	56	---	---	---	---	29	633	3.1	40	31	626	-1.7	47	29	634	4.9	50	31	631	1.6	41	
5,000	30	558	-3.4	48	28	559	-2.5	49	---	---	---	---	29	559	-2.7	46	31	552	-7.4	47	29	560	-0.6	47	31	557	-4.0	40	
6,000	29	492	-9.3	46	28	492	-8.4	---	---	---	---	---	29	492	-8.3	---	31	485	-13.6	47	29	494	-6.5	46	31	490	-9.9	38	
7,000	29	432	-15.7	46	28	432	-14.7	---	---	---	---	---	29	432	-14.6	---	31	425	-20.7	44	29	434	-12.8	47	31	430	-16.2	39	
8,000	29	377	-22.5	---	28	379	-21.1	---	---	---	---	---	28	378	-21.5	---	31	370	-27.8	---	28	380	-19.6	---	31	376	-23.2	---	
9,000	29	328	-29.7	---	28	330	-28.4	---	---	---	---	---	28	329	-28.9	---	31	321	-35.0	---	28	331	-26.6	---	31	327	-30.3	---	
10,000	28	285	-37.1	---	28	286	-36.1	---	---	---	---	---	28	286	-36.3	---	31	278	-41.9	---	27	288	-34.1	---	31	283	-37.8	---	
11,000	28	246	-44.3	---	27	247	-44.0	---	---	---	---	---	28	246	-43.5	---	30	239	-48.5	---	27	249	-41.8	---	29	244	-44.6	---	
12,000	26	211	-51.3	---	27	212	-51.5	---	---	---	---	---	28	212	-50.2	---	30	205	-51.8	---	26	214	-49.4	---	29	210	-50.5	---	
13,000	26	181	-57.5	---	27	181	-58.2	---	---	---	---	---	28	182	-56.5	---	28	175	-54.1	---	26	183	-56.9	---	27	180	-55.9	---	
14,000	22	154	-62.9	---	24	154	-63.0	---	---	---	---	---	26	155	-61.5	---	26	150	-56.5	---	26	156	-63.5	---	24	154	-60.6	---	
15,000	18	130	-66.7	---	18	131	-65.7	---	---	---	---	---	24	132	-65.1	---	16	128	-56.7	---	20	133	-68.4	---	16	131	-64.4	---	
16,000	14	110	-67.7	---	11	111	-66.2	---	---	---	---	---	11	112	-67.0	---	15	109	-57.3	---	9	112	-71.2	---	13	111	-65.3	---	
17,000	6	94	-67.1	---	8	94	-66.0	---	---	---	---	---	8	94	-65.5	---	8	93	-57.5	---	---	---	---	---	6	94	-62.5	---	
18,000	5	79	-65.1	---	---	---	---	---	---	---	---	---	5	80	-56.8	---	5	80	-56.8	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Lake Charles, La. (5 m.)				Little Rock, Ark. (79 m.)				Louisville, Ky. (165 m.)				Mazatlan, Mexico (80 m.)				Medford, Oreg. (409 m.)				Merida, Mexico (27 m.)				Miami, Fla. (4 m.)			
	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity
Surface	31	1,014	25.9	90	31	1,007	25.0	18	31	998	22.2	77	28	1,003	28.1	81	30	965	26.5	33	31	1,010	26.7	82	30	1,016	26.2	83
500	31	960	24.7	77	31	960	24.7	68	31	960	23.1	64	28	957	25.3	76	30	956	26.0	33	31	958	24.2	79	30	961	24.1	83
1,000	31	906	21.5	75	31	906	21.5	65	31	906	19.9	63	28	904	23.1	70	30	903	22.5	35	31	904	21.5	77	30	908	21.2	80
1,500	31	855	18.4	73	31	856	18.5	63	31	855	16.6	62	28	853	20.5	69	30	852	18.8	40	31	854	18.5	75	30	856	18.7	71
2,000	31	806	15.6	68	31	806	15.4	59	31	806	13.6	60	28	805	17.9	64	30	803	15.0	45	31	805	15.6	71	30	808	16.2	65
2,500	31	760	13.0	63	31	760	13.1	48	31	759	10.9	51	28	759	15.4	58	30	757	11.5	49	31	759	12.7	66	30	762	13.8	62
3,000	31	716	10.5	60	31	716	10.4	45	31	715	8.3	47	28	715	12.3	58	30	712	8.0	46	31	715	10.0	64	30	718	11.1	58
4,000	31	634	5.0	52	31	635	5.0	42	30	633	3.2	37	27	634	5.6	61	30	631	1.4	41	31	634	4.7	57	30	636	5.8	52
5,000	31	561	-0.3	41	30	561	-0.7	42	30	558	-2.5	36	25	560	-0.8	59	29	556	-5.3	38	29	559	-1.4	56	30	562	0.4	50
6,000	31	494	-6.2	46	30	494	-6.6	47	30	492	-8.7	---	25	494	-6.3	56	28	489	-12.0	---	28	493	-7.3	57	30	496	-5.3	46
7,000	31	435	-12.3	47	30	434	-12.8	44	30	432	-14.9	---	23	434	-12.2	54	28	428	-19.2	---	27	433	-13.2	53	29	436	-11.5	47
8,000	31	381	-18.8	50	30	380	-19.4	44	29	377	-21.9	---	23	380	-18.8	48	28	374	-26.6	---	27	379	-19.9	56	28	382	-18.2	52
9,000	31	332	-25.6	---	30	331	-26.5	---	29	329	-29.2	---	23	332	-26.1	---	27	325	-34.1	---	27	330	-26.9	---	27	333	-25.0	---
10,000	31	289	-32.9	---	30	288	-34.0	---	29	285	-36.4	---	20	288	-33.6	---	26	281	-40.9	---	24	287	-34.6	---	26	290	-32.6	---
11,000	30	250	-40.7	---	30	249	-41.6	---	28	246	-43.6	---	19	249	-41.4	---	26	242	-46.8	---	23	248	-42.8	---	26	251	-40.4	---
12,000	29	215	-48.7	---	30	214	-49.1	---	28	212	-50.4	---	19	214	-49.6	---	26	208	-50.7	---	23	213	-50.8	---	26	216	-48.5	---
13,000	29	184	-56.3	---	30	184	-56.3	---	28	181	-56.7	---	19	184	-57.6	---	23	178	-54.5	---	17	182	-59.1	---	26	185	-56.6	---
14,000	24	157	-62.7	---	25	157	-62.1	---	23	155	-62.2	---	12	156	-65.5	---	19	152	-56.9	---	8	154	-67.4	---	23	158	-63.5	---
15,000	18	133	-68.0	---	21	133	-67.7	---	20	131	-65.8	---	5	133	-69.6	---	16	129	-59.2	---	---	---	---	---	16	134	-68.6	---
16,000	10	113	-70.1	---	8	113	-70.0	---	10	111	-65.0	---	---	---	---	---	13	110	-60.3	---	---	---	---	---	11	114	-71.8	---
17,000	---	---	---	---	---	---	---	---	8	94	-63.5	---	---	---	---	---	8	93	-60.4	---	---	---	---	---	---	---	---	---
18,000	---	---	---	---	---	---	---	---	7	90	-62.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19,000	---	---	---	---	---	---	---	---	5	68	-60.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Nashville, Tenn. (180 m.)				North Platte, Nebr. (849 m.)				Oakland, Calif. (2 m.)				Ogden, Utah (1,355 m.)				Oklahoma City, Okla. (391 m.)				Omaha, Nebr. (308 m.)				Phoenix, Ariz. (339 m.)			
	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity	Number of servations	Pressure	Temperature	Relative humidity
Surface	31	995	24.7	74	30	919	21.4	78	31	1,013	16.5	75	30	865														

TABLE 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during August 1945—Continued

Altitude (meters) m. s. l.	Pittsburgh, Pa. (382 m.)				Portland, Maine (20 m.)				Rapid City, S. Dak. (981 m.)				St. Louis, Mo. (171 m.)				St. Paul, Minn. (225 m.)				San Antonio, Tex. (240 m.)				San Juan, P. R. (15 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface.....	31	973	20.6	71	24	1,014	17.1	86	31	904	20.2	63	31	996	23.3	75	31	989	20.7	75	31	985	28.5	63	31	1,013	26.6	83
500.....	31	961	20.5	68	24	960	19.1	65	31	902	20.8	60	31	960	23.3	64	31	959	20.3	68	31	957	27.1	64	31	959	23.0	81
1,000.....	31	906	18.2	65	24	905	16.1	65	31	852	20.6	46	31	906	20.4	64	31	904	17.5	67	31	904	23.7	66	31	906	19.7	77
1,500.....	31	854	14.8	65	24	853	13.1	67	31	852	20.6	46	31	855	17.3	64	31	853	14.7	60	31	853	20.2	67	31	854	17.0	71
2,000.....	31	804	11.5	60	24	803	10.5	62	31	803	17.4	47	31	806	14.5	57	31	803	11.9	54	31	805	16.9	68	31	805	14.6	63
2,500.....	31	758	8.6	58	24	757	8.0	56	31	757	14.0	49	31	760	12.3	49	31	757	9.5	47	31	759	13.8	66	31	759	12.4	52
3,000.....	31	713	6.0	49	24	712	5.3	56	31	713	10.7	50	31	715	9.5	45	31	712	6.7	46	31	715	10.8	63	31	715	9.5	47
4,000.....	30	631	0.8	44	23	629	-0.3	50	30	632	3.6	47	31	634	3.6	45	31	630	0.8	49	30	634	5.3	51	31	633	3.8	41
5,000.....	30	556	-4.5	36	23	555	-5.9	44	30	558	-3.6	43	30	559	-2.0	40	31	555	-5.3	45	30	560	0.1	43	31	559	-1.6	39
6,000.....	30	489	-10.3	42	23	487	-12.2	44	30	490	-10.2	44	30	492	-8.2	37	31	488	-11.2	45	30	494	-5.2	36	31	492	-7.2	35
7,000.....	30	429	-16.6	23	23	427	-18.9	29	30	430	-16.6	29	30	433	-14.6	30	31	428	-17.9	30	30	435	-11.4	35	31	433	-13.4	37
8,000.....	30	375	-23.4	23	23	372	-25.7	29	30	376	-23.0	29	30	379	-21.1	29	31	374	-24.8	30	30	381	-18.3	38	31	379	-20.4	40
9,000.....	30	326	-30.6	23	23	324	-32.7	29	30	327	-30.0	29	30	330	-28.2	29	31	325	-31.9	30	30	332	-25.7	30	30	330	-28.0	40
10,000.....	30	283	-37.9	23	23	280	-40.0	29	30	284	-36.8	28	30	286	-35.4	28	31	282	-39.0	30	30	288	-33.0	30	30	287	-35.8	40
11,000.....	29	244	-44.9	23	23	242	-47.0	29	29	245	-43.5	26	29	248	-42.4	26	30	243	-45.6	30	30	250	-40.7	29	29	248	-44.1	40
12,000.....	29	210	-50.6	23	23	207	-53.3	29	29	211	-49.6	24	29	213	-49.7	24	30	209	-51.0	30	29	215	-48.5	28	29	213	-52.0	40
13,000.....	29	179	-55.3	22	22	177	-56.6	29	29	180	-55.6	22	29	182	-56.4	22	30	178	-55.8	29	29	184	-56.1	26	182	-59.8	40	
14,000.....	27	153	-59.0	19	19	151	-58.4	26	26	154	-60.8	19	19	156	-62.0	19	30	152	-59.6	25	25	157	-62.7	23	154	-67.0	40	
15,000.....	21	130	-62.1	17	17	129	-60.1	20	20	131	-64.2	14	19	133	-67.2	14	30	130	-62.8	19	19	134	-68.2	11	131	-71.0	40	
16,000.....	14	111	-62.5	9	9	109	-59.4	12	12	111	-64.9	7	15	112	-69.5	7	30	110	-62.9	15	15	114	-72.6	8	111	-73.8	40	
17,000.....	7	93	-59.4	6	6	93	-58.4	5	5	95	-64.6	5	8	94	-61.2	5	30	94	-61.2	8	8	94	-61.2	8	94	-61.2	40	
18,000.....	7	93	-59.4	6	6	93	-58.4	5	5	95	-64.6	5	8	94	-61.2	5	30	94	-61.2	8	8	94	-61.2	8	94	-61.2	40	

Altitude (meters) m. s. l.	Santa Maria, Calif. (71 m.)				Sault Ste. Marie, Mich. (221 m.)				Spokane, Wash. (598 m.)				Swan Island, W. I. (10 m.)				Tacubaya, Mexico (2,306 m.)				Tampa, Fla. (3 m.)				Tatoosh Island, Wash. (31 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface.....	31	1,005	14.2	87	31	990	15.6	85	30	943	23.7	37	31	1,012	26.5	86	31	774	15.8	75	31	1,016	25.9	87	31	1,014	11.9	95
500.....	31	956	16.9	76	31	959	17.1	70	30	901	22.9	33	31	958	23.6	84	31	961	23.8	81	31	961	23.8	81	31	960	13.2	78
1,000.....	31	902	21.7	34	31	904	14.9	64	30	850	18.8	35	31	904	20.8	78	31	908	21.0	78	31	908	21.0	78	31	904	14.2	55
1,500.....	31	851	21.0	30	31	852	11.8	67	30	850	14.6	38	31	853	18.0	72	31	856	18.0	75	31	856	18.0	75	31	852	12.8	48
2,000.....	31	802	18.2	30	31	802	9.1	64	30	802	14.6	38	31	804	15.3	67	31	808	15.1	71	31	808	15.1	71	31	802	10.1	44
2,500.....	31	757	14.9	30	31	755	6.8	56	30	756	10.2	42	31	758	12.6	60	31	757	14.5	74	31	761	12.2	69	31	755	7.0	41
3,000.....	31	713	11.5	28	31	710	4.3	48	30	711	6.6	42	30	714	9.9	56	31	713	11.0	75	31	717	9.6	65	31	710	3.9	39
4,000.....	30	632	5.2	23	31	628	-0.9	48	30	629	-0.4	41	30	633	3.8	58	31	632	4.2	82	31	635	3.9	63	31	627	-2.1	37
5,000.....	30	558	-1.2	23	31	553	-6.7	43	30	554	-7.1	38	30	558	-2.0	54	30	558	-1.8	82	29	561	-1.8	60	31	552	-8.4	36
6,000.....	30	492	-7.9	23	30	486	-12.6	48	30	486	-13.6	29	492	-7.9	56	29	492	-7.0	74	28	494	-7.4	58	29	494	-15.1	36	
7,000.....	30	432	-14.7	23	30	426	-19.5	52	30	426	-20.8	29	432	-14.0	56	29	432	-12.7	68	28	434	-13.5	58	29	424	-22.0	40	
8,000.....	30	377	-21.7	23	30	371	-20.6	29	30	372	-28.1	29	378	-20.5	55	29	378	-19.2	64	28	380	-20.3	63	29	370	-29.4	40	
9,000.....	28	329	-28.6	23	29	322	-34.4	29	30	322	-35.5	26	330	-27.9	29	29	330	-26.1	27	27	331	-27.4	27	29	320	-37.0	40	
10,000.....	28	285	-35.6	23	29	279	-41.6	29	30	279	-42.4	26	286	-35.7	29	286	-33.5	27	27	287	-35.0	27	287	-35.0	27	277	-44.2	40
11,000.....	27	246	-42.2	23	28	240	-48.3	29	30	240	-47.8	26	247	-44.3	29	247	-41.6	26	248	-43.2	27	248	-43.2	27	238	-49.9	40	
12,000.....	26	212	-46.2	23	27	206	-52.7	29	30	206	-51.3	26	212	-42.9	29	212	-39.5	26	214	-40.8	26	213	-51.3	27	204	-52.9	40	
13,000.....	26	182	-56.0	24	24	176	-55.3	29	30	176	-53.3	23	181	-61.3	29	181	-58.0	24	182	-58.0	24	182	-59.2	26	174	-63.8	40	
14,000.....	25	155	-61.6	22	22	150	-56.9	26	26	151	-54.8	18	154	-68.5	22	154	-65.7	22	156	-65.7	22	155	-65.6	25	149	-54.2	40	
15,000.....	23	131	-65.5	18	18	128	-58.1	25	25	129	-56.5	14	130	-73.5	10	132	-73.2	13	131	-69.3	13	131	-69.3	21	128	-54.8	40	
16,000.....	18	112	-66.9	14	14	109	-58.1	18	18	110	-57.6	9	110	-76.0	5	93	-74.8	10	94	-69.3	10	94	-69.3	18	109	-54.9	40	
17,000.....	13	94	-67.0	12	12	93	-57.0	13	13	94	-67.7	5	93	-74.8	5	93	-74.8	10	94	-69.3	10	94	-69.3	18	109	-54.9	40	
18,000.....	9	80	-65.0	10	10	79	-56.1	9	9	80	-57.2	5	93	-74.8	5	93	-74.8	10	94	-69.3	10	94	-69.3	18	109	-54.9	40	

Altitude (meters) m. s. l.	Toledo, Ohio (191 m.)				Washington, D. C. (25 m.)				Toledo, Ohio (191 m.)				Washington, D. C. (25 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface.....	31	994	19.4	76</												

TABLE 2.—Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.) during August 1945
Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,065 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity			
Surface	30	104	3.0	31	215	1.6	30	264	0.9	31	256	0.3	31	230	1.2	31	315	3.1	31	106	4.5	31	273	3.2	26	245	1.7	31	146	1.8	31	33	0.5	31	72	1.6	30	152	2.1
500	30	119	2.6	31	215	1.6	30	290	0.2	31	256	0.3	31	227	1.0	31	322	2.5	31	121	5.2	31	272	4.8	26	246	2.9	31	159	3.8	31	297	0.5	31	72	1.6	30	152	2.1
1,000	30	116	2.8	31	215	1.6	30	305	0.4	31	256	0.3	31	234	1.5	31	268	1.7	31	117	3.7	30	261	5.4	26	238	2.8	29	186	2.6	31	256	1.3	31	72	1.6	30	152	2.1
1,500	30	116	2.8	31	215	1.6	30	305	0.4	31	256	0.3	31	234	1.5	31	268	1.7	31	117	3.7	30	261	5.4	26	238	2.8	29	186	2.6	31	256	1.3	31	72	1.6	30	152	2.1
2,000	29	125	2.2	31	223	1.9	27	319	0.8	31	233	1.4	30	249	2.7	31	265	1.3	27	99	1.3	28	274	6.0	22	270	6.0	26	249	2.1	27	278	2.7	31	78	1.8	30	156	2.3
2,500	24	132	2.2	31	218	1.6	26	73	0.4	31	258	3.9	29	271	4.7	31	229	2.3	26	73	0.7	24	276	7.0	19	269	5.4	24	252	2.3	24	280	3.7	31	100	1.6	29	141	2.2
3,000	20	135	1.7	31	230	0.9	23	76	0.3	30	263	6.6	26	273	6.7	31	217	4.1	23	318	0.6	19	280	7.6	17	265	5.1	22	271	2.3	21	290	4.2	26	159	1.6	27	121	2.4
3,500	20	135	1.7	31	230	0.9	23	76	0.3	30	263	6.6	26	273	6.7	31	217	4.1	23	318	0.6	19	280	7.6	17	265	5.1	22	271	2.3	21	290	4.2	26	159	1.6	27	121	2.4
4,000	15	225	0.3	31	333	0.5	19	317	1.5	29	271	9.4	23	277	12.6	27	224	7.1	22	207	0.1	15	293	9.2	13	267	4.3	19	280	2.8	15	323	4.5	25	258	2.8	22	103	3.5
4,500	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4
5,000	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4
6,000	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4
8,000	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4
10,000	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4
12,000	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4
14,000	14	355	2.5	29	256	1.2	15	309	3.1	29	265	11.1	17	276	14.0	25	229	9.7	16	303	1.9	14	115	2.1	13	267	4.3	18	295	2.7	11	314	6.6	19	262	6.9	13	69	2.4

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet Ill. (178 m.)			Las Vegas, Nev. (573 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (410 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)				
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity					
Surface	31	212	3.8	31	329	2.2	28	165	0.6	30	307	0.2	31	97	3.1	31	195	0.8	31	172	1.7	31	144	0.5	31	319	2.0	30	130	3.9	27	172	1.2	30	274	0.8	29	197	1.2		
500	31	212	3.8	31	329	2.2	28	165	0.6	30	307	0.2	31	97	3.1	31	195	0.8	31	172	1.7	31	144	0.5	31	319	2.0	30	130	3.9	27	172	1.2	30	274	0.8	29	197	1.2		
1,000	31	212	3.8	31	329	2.2	28	165	0.6	30	307	0.2	31	97	3.1	31	195	0.8	31	172	1.7	31	144	0.5	31	319	2.0	30	130	3.9	27	172	1.2	30	274	0.8	29	197	1.2		
1,500	31	212	3.8	31	329	2.2	28	165	0.6	30	307	0.2	31	97	3.1	31	195	0.8	31	172	1.7	31	144	0.5	31	319	2.0	30	130	3.9	27	172	1.2	30	274	0.8	29	197	1.2		
2,000	31	212	4.0	31	304	2.4	25	332	1.2	29	237	2.9	24	246	2.2	31	247	4.6	31	189	4.7	29	108	0.8	31	245	2.6	28	121	3.2	15	54	1.4	30	301	0.6	25	292	4.7		
2,500	31	203	4.2	31	277	2.7	23	5	2.2	27	251	4.0	22	253	2.1	18	285	4.6	31	193	5.4	27	33	1.4	31	230	3.6	27	118	2.8	13	49	1.6	27	292	1.1	25	294	5.6		
3,000	30	200	3.6	31	248	3.3	18	342	2.8	22	261	5.6	21	266	2.2	14	276	5.5	31	196	6.2	25	7	2.1	31	210	3.9	23	125	2.8	12	51	1.2	27	299	1.5	21	296	5.3		
3,500	28	209	5.7	27	240	6.8	17	320	4.2	15	279	8.0	16	206	1.4	11	297	6.2	26	201	7.6	21	2	1.3	30	207	4.8	19	133	3.1	---	---	---	---	---	---	---	---	---		
4,000	27	226	8.5	22	241	7.0	14	319	5.2	14	268	10.3	11	300	1.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4,500	23	230	11.9	17	242	6.4	11	315	5.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
5,000	17	227	19.2	12	262	9.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
6,000	10	234	24.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
8,000	17	227	19.2	12	262	9.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
10,000	10	234	24.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
12,000	10	234	24.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (15 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	279	4.9	31	153	3.8	31	169	1.2	31	251	1.3	31	133	1.1	30	96	0.4	31	216	1.6	30	93	2.9	30	278	3.9	28	270	4.1	30	282	1.7	31	238	1.9	29	187	1.8
500	30	278	4.0	31	157	3.9	31	171	2.4	31	251	2.1	31	107	0.3	30	107	0.3	31	236	1.9	30	93	3.4	30	283	2.6	28	262	4.9	30	308	1.1	29	220	2.4			
1,000	30	250	2.3	31	164	3.9	31	178	3.5	31	245	2.4	31	135	1.0	30	216	0.5	30	254	2.8	30	90	3.3	30	231	1.4	28	268										

ESTIMATED FLOOD LOSSES AND SAVINGS FOR 1942 AND 1943¹

By BENNETT SWENSON

Monetary losses from floods in the United States have been estimated at about \$98,500,000 during the year 1942, and nearly \$200,000,000 during 1943. Lives lost as the result of floods in the 2 years total 173. The savings, as the result of the flood forecasting and warning service, are reported at about 60 million dollars.

¹ Annual flood losses and savings for previous years have been published in the MONTHLY WEATHER REVIEW as follows:

Year	Issue of REVIEW	Pages
1933	Vol. 62, No. 1, Jan. 1934	25-27
1934	Vol. 62, No. 12, Dec. 1934	465-467
1935	Vol. 63, No. 12, Dec. 1935	362-365
1936	Vol. 65, No. 1, Jan. 1937	28-31
1937	Vol. 66, No. 12, Dec. 1938	426-430
1938	Vol. 68, No. 9, Sept. 1940	262-263
1939	Vol. 68, No. 11, Nov. 1940	320-330
1940	Vol. 69, No. 7, July 1941	217-218
1941	Vol. 71, No. 11, Nov. 1943	185-186

Prior to 1933 losses and savings have been published monthly, as a rule.

Outstanding among the floods during 1942 were the disastrous flash floods in the headwater areas of the Delaware, Susquehanna, and Allegheny River basins, resulting in the loss of 45 lives; a record-breaking flood in portions of the Potomac and Rappahannock River basins in October; a major flood in the Willamette River in November; and widespread flooding in the Central West, from Minnesota to Texas, during the summer months.

The major flood event of the year 1943 was the widespread and record-breaking flood during May, covering most of 7 central states from Oklahoma to Michigan. The most destructive flood in point of loss of life, considering the small area involved, occurred in the Little Kanawha River in West Virginia during August, in which 23 lives were lost. An unusually early midwinter flood in the Ohio River began in December 1942 and continued into January 1943, reaching major proportions. Unusual also were the record-breaking floods and ice jams in the upper Missouri River in March and April, resulting from rapid melting of low altitude snow in eastern Montana and North Dakota.

ESTIMATED FLOOD LOSSES AND SAVINGS FOR 1942

River and drainage	Tangible property	Matured crops	Prospective crops	Livestock and other movable farm property	Suspension of business	Total	Lives lost	Reported savings as the result of warnings
HUDSON BAY DRAINAGE								
Red River of the North	\$2,500					\$2,500		
ST. LAWRENCE DRAINAGE								
Lake Michigan								
Grand River	63,575				\$1,250	64,825		\$185,000
Lake Huron								
Saginaw River	32,400	\$5,000		\$25,000	3,350	85,750		10,000
ATLANTIC SLOPE DRAINAGE								
Merrimack River	151,000		\$2,000			153,000		
Connecticut River						40,000		
Hudson River	20,000					20,000		
Schuylkill River	7,200				1,250	1,084,100	4	935,100
Delaware River						11,500,000	25	
Susquehanna River	3,086,200		188,000			3,074,200	4	
Potomac River	2,686,410	275,100	436,100	56,500	17,500	3,471,610	2	253,500
Rappahannock River	1,739,490		228,140	10,300		1,977,930		
James River	183,300	86,850	21,050	13,500	27,500	332,200		197,500
Roanoke River					8,500	34,500		17,500
Neuse River	10,000	87,000	10,000		600	107,600		
Pee Dee River	5,230		780	2,400	19,150	27,560		13,000
Santee River			4,800	3,000	24,000	31,800		20,900
Savannah River					4,000	4,000		10,000
Altamaha River	12,300	1,200	22,000	13,900	20,900	70,300		89,000
EAST GULF OF MEXICO DRAINAGE								
Apalachicola River	100		150	1,000	12,000	13,250		8,500
Alabama River	39,000	2,000	20,300	5,500	1,000	67,800		42,500
Black Warrior-Tombigbee Rivers	28,200			10,500	19,000	57,700		210,000
Pasagoula River	2,500		300	3,300	7,500	13,600		8,500
Pearl River				3,000		3,000		6,000
MISSISSIPPI SYSTEM								
Upper Mississippi Basin								
Chippewa River	1,596,000	104,800	25,100	10,000	19,000	1,754,900		65,000
Root, Whitewater, and LaCrosse Rivers	24,000	20,000	122,500	6,250	10,000	182,750		7,000
Wisconsin River	2,000	3,600	7,900	200	500	137,900		5,500
Rock River	300					300		3,000
Cedar-Iowa Rivers	102,000	25,000	190,500	30,000		347,500	1	6,000
Salt River	5,000	1,000	420,000			426,000		
Mississippi River above Cairo, Illinois	663,050	84,500	1,973,106	19,630	67,100	2,842,706		483,900
Missouri Basin								
Checkerboard Creek	83,500		10,050	200		93,750		
Nemaha River	170,126	18,118		3,917		192,161		
James River	250,000		15,000			265,000		
Vermillion River (S. Dak.)	1,000		80,000			81,000		
Big Sioux River	15,000		200,000	1,000		216,000		
Floyd River	200,000		175,000	5,000		380,000		
Salt Creek	336,779		15,720	232,105	9,200	593,804	1	5,100
Solomon River	44,850	81,633	45,267			121,750		2,800
Smoky Hill River	75,300	182,683	311,067	21,500	15,500	606,050		42,000
Republican River	134,650	30,584	295,581	4,000	1,500	466,315		
Big Blue River	18,700	38,390	43,000	4,000	3,300	107,390		
Kansas River	123,000	268,500	140,720	7,000	10,000	549,220		15,000
Grand River	196,002		2,150,355	1,435		2,347,792		
Chariton River	3,335		108,905			112,240		
Osage River	69,979	5,000	288,789	7,600		371,368		
Missouri River	2,038,850		13,947,150	16,400	1,700	16,004,100		359,800

See footnotes at end of table.

ESTIMATED FLOOD LOSSES AND SAVINGS FOR 1942—Continued

River and drainage	Tangible property	Matured crops	Prospective crops	Livestock and other movable farm property	Suspension of business	Total	Lives lost	Reported savings as the result of warnings
MISSISSIPPI SYSTEM—continued								
Ohio Basin								
Allegheny River.....	\$6,288,850		¹ \$562,000			\$6,850,850	12	
Big Sandy River.....						1,500,000	2	
Scioto River.....		\$100,000				100,000		
Green River.....	1,000		15,000		\$1,000	17,000		
Wabash River.....	38,100	25,600	212,750	\$9,000	25,000	310,450		\$58,850
Cumberland River.....	160,000	70,000	90,000	1,000	16,300	337,300		158,500
French Broad River.....	10,240	1,200	34,000	100		45,540		2,000
Tennessee River.....	126,775	32,015	38,000	14,480	7,522	218,792		50,000
Ohio River.....	7,088,069	49,931	11,500	3,000	13,750	7,166,250	2	14,451,00
White Basin								
Black River.....	5,000			1,000	1,000	* 8,000		4,000
White River.....	58,000		28,400	7,500	10,000	103,900		11,250
Arkansas Basin								
Chikaskia River.....	105,400	312,000	81,000	1,000		499,400		
Purgatoire River.....	417,600		19,400	65,100	28,100	* 530,200		
Cimarron River.....	520,670	55,000	5,500	5,000	10,000	* 1,378,170		10,000
Neosho River.....	21,300	21,300	79,250		500	122,350		10,000
North Canadian River.....	180,300	1,000	113,000	13,000	16,900	324,200		6,000
Canadian River.....	161,180	3,550	62,350	6,900	13,180	247,160		37,700
Arkansas River.....	1,879,775	84,200	1,198,850	45,400	65,800	¹⁰ 3,363,025		517,000
Red Basin								
Little River.....	150		6,000	500	500	7,150		5,000
Sulphur River.....	33,000		15,000	2,500	1,500	52,000		15,000
Cypress River.....	1,500		5,000		1,000	7,500		2,500
Ouachita River.....	84,400	260,000	30,000	10,000	10,000	394,400		220,000
Red River.....	128,500	136,000	¹¹ 1,420,000	18,900	40,500	1,743,900		143,000
Lower Mississippi Basin								
Yazoo River.....			300,000		175,000	475,000		25,000
WEST GULF OF MEXICO DRAINAGE								
Trinity River.....	4,187,500	5,820,350		244,000	182,000	10,433,850	2	2,717,000
Brazos River.....	10,000	750	78,500	2,500	26,000	117,750		5,625
Colorado River.....	4,000			1,000		5,000		15,000
Guadalupe River.....	6,200	239,650	146,500	3,650		396,000		637,500
Nueces River.....	48,500	90,000	125,000	6,500		270,000		280,000
Pecos River.....	82,000	20,000	53,000		10,000	165,000		
Rio Grande.....	42,700	202,250	854,500	2,000		1,101,450		22,000
GULF OF CALIFORNIA DRAINAGE								
Colorado Basin								
Gunnison River.....	2,850					2,850		
PACIFIC SLOPE DRAINAGE								
Sacramento River.....	1,184,600	6,000	698,380	14,000	52,500	1,955,480		126,500
Eel River.....	22,000					22,000		4,000
Willamette River.....						6,894,000	10	
Total.....	37,145,985	8,771,754	27,808,210	996,187	1,013,352	98,506,198	66	22,506,525

¹ Including matured crops.² Includes losses of \$1,075,710 which were not classified.³ Includes losses of \$800,000 which were not classified.⁴ \$14,000 of which represents all crop loss.⁵ Includes losses of \$23,700 which were not classified.⁶ Includes losses of \$65,300 which were not classified.⁷ Includes losses of \$1,000 which were not classified.⁸ Furnished by U. S. E.⁹ Includes losses of \$782,000 which were not classified.¹⁰ Includes losses of \$89,000 which were not classified.¹¹ \$720,000 of which represents all crop loss.

ESTIMATED FLOOD LOSSES AND SAVINGS FOR 1943

River and drainage	Tangible property	Matured crops	Prospective crops	Livestock and other movable farm property	Suspension of business	Total	Lives lost	Reported savings as the result of warnings
HUDSON BAY DRAINAGE								
Red River of the North.....	\$815,453	\$4,000	\$155,000	\$1,000	\$55,000	\$1,030,453	1	\$536,000
ST. LAWRENCE DRAINAGE								
Grand and Saginaw Rivers.....	110,300		1,016,300	200	7,000	1,133,800		6,000
Maumee River.....						7,400,000		2,000,000
ATLANTIC SLOPE DRAINAGE								
Schuylkill River.....	647				171	818		6,000
Juniata River.....							4	
Cape Fear, Neuse, and Roanoke Rivers.....	450		17,250		59,000	76,700		124,500
Pee Dee River.....	2,400			12,000	13,700	28,100		17,500
Santee River.....			1,600	24	750	2,374		7,450
Savannah and Ogeechee Rivers.....	750			150	6,700	7,600		30,750
Altamaha River.....	5,500			4,500	27,500	37,500		60,000
EAST GULF OF MEXICO DRAINAGE								
Apalachicola River.....	186,650	5,000	1,500	8,500	96,700	298,350		23,500
Pea River.....	20,000			300		20,300		
Choctawhatchee River.....				2,000		2,000		1,000
Conecuh River.....	1,550			3,200	6,500	11,250		5,000
Oostanula and Etowah Rivers.....			60,000		1,000	61,000		1,000
Coosa River.....	5,500		75,000	10,000		90,500		115,000
Tallapoosa River.....	1,000		2,000	500		3,500		80,000
Cahaba River.....	500		2,500	2,400		5,400		38,000
Alabama River.....	5,000		47,500	15,000		67,500		100,000
Black Warrior and Tombigbee Rivers.....	24,000		20,500	9,300	11,500	65,300		20,000
Pascagoula River.....	29,590			35,860	39,600	105,050		29,800
Biloxi and Crane Rivers.....	1,500		250	250	500	2,500		5,000
Pearl River.....	32,000		400	2,780	5,560	40,740		36,500

ESTIMATED FLOOD LOSSES AND SAVINGS FOR 1943—Continued

River and drainage	Tangible property	Matured crops	Prospective crops	Livestock and other movable farm property	Suspension of business	Total	Lives lost	Reported savings as the result of warnings
MISSISSIPPI SYSTEM								
Upper Mississippi Basin								
St. Croix River	\$25,000	\$3,000	\$5,000	\$2,000		\$35,000		\$2,000
Chippewa River	100,000	5,000	21,000	2,000	\$25,000	153,000		20,000
Zumbro-Whitewater Rivers	10,500	6,000	48,000	2,500	1,000	68,000		8,000
Black, La Crosse, and Trempealeau Rivers	388,300	25,000	142,700	4,000	8,900	568,900	1	10,000
Wisconsin River	1,220	1,890	11,290		1,300	15,670		27,200
Rock River	500				500	1,000		4,500
Iowa River	30,000		50,000	5,000		85,000		
Skunk River	53,400	1,000	2,019,900	18,875		2,093,175		
Salt River	83,000		1,114,500	1,500		1,199,000		
Cuivre River	40,000		741,500	3,000	17,500	802,000		
Illinois River	2,837,000		5,906,000	16,000	1,001,500	9,760,500	7	1,345,000
Meramec River	23,500		100,000		20,000	143,500		
Kaskaskia River	339,500		3,871,500	3,500	71,000	4,285,500	4	
Mississippi River above Cairo, Ill.	7,281,541	146,650	13,407,433	222,846	1,683,900	22,887,126	4	5,051,500
Missouri Basin								
Milk River						75,000	2	
Yellowstone River	700			8,600		9,300	1	
Little Missouri River			12,000			\$ 32,000		
Knife River and Spring Creek	95,000	35,000	15,000	15,000	5,000	165,000	3	
Burnt and Square Butte Creeks						6,000		
Heart River	630,000	90,000	2,000	4,000	9,000	735,000	1	200
Grand River (S. Dak.)	5,700	1,500		4,100		11,300		5,000
Niobrara River	41,600		500	500		42,600		
James River	211,500		705,700		2,500	919,700		
Big Sioux River	1,000					1,000		
Little Sioux River	22,600		229,400		1,800	253,800		
Boyer River	4,000					4,000		
Elkhorn River	200					200	1	
Solomon River	1,000					16,000		8,000
Kansas River	1,732,564		8,197,147	179,638		10,109,349		211,000
Osage River	1,104,017	15,000	6,675,718	90,518		7,885,253	5	31,000
Gasconade River	126,990		637,681	8,450		773,121		
Missouri River	13,907,353	366,527	26,358,335	556,639	312,928	41,591,782		11,275,760
Ohio Basin								
Clarion River	75,000					75,000		
Tygart River	1,500	20,500	11,250		600	33,850	1	
Youghiogheny River							2	
Little Kanawha River						1,365,000	23	
Scioto River	2,000	1,500	500		50	4,050		8,000
Green River	6,000	50,260	48,000		7,000	111,260		68,200
White-Wabash Rivers	6,517,900	421,125	14,319,200	432,675	517,750	22,206,650	13	2,646,700
Cumberland River	3,000	5,000	6,000		5,450	19,450		25,000
Tennessee River	5,328	22,625	1,210	295	19,910	49,368		11,017
Ohio River	1,697,706	1,088,810	1,119,170	64,709	1,083,620	7,549,015	5	4,185,750
White Basin								
White River	659,106	276,290	6,064,823	131,540	188,700	7,320,429	1	1,392,500
Arkansas Basin								
Walnut River	13,000		\$ 154,000			\$ 169,000		
Cimarron River	148,000		267,050			415,050		
Verdigris River	1,430,840		3,748,970		369,170	5,548,980		119,000
Neosho River	1,507,508	34,500	2,442,220	137,000	596,440	4,717,668		92,500
North and South Canadian Rivers	273,420		1,423,560		78,010	1,774,990	6	30,500
Arkansas River	5,960,510		9,271,190		1,828,300	\$ 21,904,225	19	8,281,000
Red Basin								
Sulphur River	550			300	750	1,600		2,500
Ouachita River	50		10,000	2,000	30,000	42,050		200,000
Lower Mississippi Basin								
Tallahatchie River	10,000		275,000		10,000	295,000		
Mississippi River	27,200		483,500		23,500	534,200		85,300
WEST GULF OF MEXICO DRAINAGE								
Sabine River	1,128,000	84,000	446,000	10,000	300,000	1,968,000		500,000
Trinity River	139,000	500	473,000	2,400	5,800	620,700		121,000
GULF OF CALIFORNIA DRAINAGE								
Colorado Basin								
Price River						70,000		
GREAT BASIN DRAINAGE								
Great Basin drainage				30,000		\$ 240,000		
PACIFIC SLOPE DRAINAGE								
Kings, Kern, Tule, and Kaweah Rivers						6,033,299	1	
San Joaquin and Mokelumne Rivers	52,000	150,000	27,000	5,600		234,600		500,000
Sacramento River	225,700	1,500	139,700	500	9,500	376,900		31,000
Eel River	25,000					25,000		15,000
South California coastal drainage							1	
Snake River						609,600	1	
Columbia River	26,500	9,000	103,200	500	58,500	197,700		650,500
Total	50,365,593	2,871,147	112,521,617	2,074,149	8,626,059	199,733,145	107	40,192,627

¹ Including losses of \$144,756 which were not classified.

² Including losses of \$20,000 which were not classified.

³ Includes May-June damages by sub-basins as follows: Kansas, \$4,738,818; Blue, \$1,372,656; Republican, \$1,068,704; Solomon, \$385,137; Saline, \$30,681; Delaware, \$791,825; Wakarusa, \$232,232; Vermillion, \$178,433; Stranger, \$417,730; Soldier, \$103,188; Mill Creek, \$789,945.

⁴ Includes damage of \$3,246,200 for Grand River during May and June.

⁵ Including losses of \$2,495,000 which were not classified.

⁶ Including matured crops.

⁷ Including losses of \$2,000 which were not classified.

⁸ Including losses of \$4,843,925 which were not classified.

⁹ Including losses of \$210,000 which were not classified.

RIVER STAGES AND FLOODS FOR AUGUST 1945

By C. R. JORDAN

Rainfall was spotty during August with more than three times the normal on the Texas Gulf Coast, in northern Utah, and in northern Nevada. Less than half the normal amount fell in the Northwest, the Southwest, the east-central Plains, and over a broad area between the middle Gulf and New England.

There was no general flooding during the month but damaging local floods resulted from excessive rainfall at scattered points throughout the country. There was some very light overflow at a few points along rivers in North Carolina, Louisiana, West Virginia, Ohio, and Indiana. The St. Francis River fell below flood stage at St. Francis, Ark., on August 13, the first time that the stream was below flood stage at this point since March 13, 1945.

Some damage was reported from local flooding of small creeks in the Chester, Pa.-Wilmington, Del., area on August 1.

Flash floods were reported in West Virginia, two of which were rather severe. One occurred during the early hours of August 2 in the creeks flowing into the Kanawha River between Montgomery and Charleston. The main stream did not go out of its banks. Two lives were lost as a result of the flood and considerable damage was done to homes, roads, bridges, and crops in the area. Another but somewhat less severe flood occurred in the vicinity of Ripley, W. Va., during the same period. The second storm occurred on August 23 in the West Fork River Basin. Rainfall of over 5 inches in 20 hours was recorded at Tygart Dam, W. Va. The most severe flooding was reported in the Elk Creek Valley at Clarksburg, W. Va.

The following report of a severe electrical storm was received from the Weather Bureau Office, Davenport, Iowa:

An exceptionally severe electrical storm, attended by rainfall in an amount of 4.01 inches, struck Clinton, Iowa, and much of Clinton County between midnight and 3 a. m., August 14, 1945.

Numerous creeks overflowed, carrying trees, stumps, fences, hog troughs, etc. Much damage was caused to the footings and approaches of the new Mill Creek Bridge, and two bridges in the city were washed out. Mud, sand, and gravel in heavy deposits covered streets and sidewalks in all parts of the city. Several inches of mud and sand were deposited on the floors of the cabins in the Shady Haven Camp. Water several inches deep covered the floors of many lowland homes. Subways were blocked to traffic by water. Many sections of pavements were washed out.

Although creeks overflowed their banks, there were no flood stages at regular river-gaging stations on the Mississippi and other main streams. Losses, therefore, were the result of the storm and other local overflows, but they were of such proportions as are usually associated with true river floods. Tangible property destroyed or damaged and the costs for cleaning up mud, sand, etc., amounted to a loss of approximately \$522,000, mostly in the city of Clinton. Field and garden crops lost were estimated at \$13,000. Livestock and movable farm equipment lost amounted to \$500.

Intense local mountain thundershowers did considerable damage near Tucson and in and near Clifton, Ariz., during the month.

A severe hailstorm passed over the north portion of Salt Lake City, Utah, on Sunday evening, August 19, 1945, followed by heavy flood damage in the City Cemetery, Lindsay Gardens, and Memory Grove areas. Not since the destructive earth washes of July 10, 1930, be-

tween Centerville and Farmington, when the state highway in Davis County was filled with rocks and debris over 8 feet deep, has so much damage resulted from a single storm in the State of Utah. The following report of the flood damage was received from Mr. G. K. Greening, Official in Charge, Weather Bureau Office, Salt Lake City, Utah:

The storm struck Black Rock about 9:15 p. m., August 19; the Salt Lake City Airport at 10:25 p. m.; 282 North Main Street at 10:27 p. m.; and Hoytsville at about 11:30 p. m. The hail ended at 10:48 p. m., at the Salt Lake City Airport Station, continuing over a period of 23 minutes.

Following on the heels of the hailstorm which damaged property to the extent of at least \$100,000, flood water damage amounting to approximately \$400,000 occurred in three separate areas of Salt Lake City; namely, Memory Grove, Lindsay Gardens, and City Cemetery. The catchment areas which were the sources of the floods are unusually small for such heavy damage. Perry's Hollow drains an area of 0.59 square mile and Valley View Canyon, 0.27 square mile.

Hardest hit sections of the city were hundreds of homes on the Avenues; M Street South to 1st Avenue; N, O, and P Streets between 3rd and 4th Avenues; 10th Avenue and I Street; and the City Cemetery. Basement-stored household effects in many homes were a complete loss, garages were mud-filled, and lawns were littered with debris and rubble. Gravestones were toppled over in City Cemetery, and tons of stones and debris were tossed over the ground.

Hoytsville, Utah, had been visited by a destructive local flood that came down Spring Canyon on August 6, from which the village was beginning to recover. Heavy damage occurred again following a torrential downpour that began at 11:30 p. m., on August 19, causing approximately \$30,000 damage in that vicinity.

FLOOD STAGE REPORT FOR AUGUST 1945

[All dates in August unless otherwise indicated]

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Roanoke: Williamston, N. C.....	<i>Feet</i> 10	July 31	5	10.3	1
Tar: Greenville, N. C.....	13	1	3	14.4	2
Neuse:					
Smithfield, N. C.....	13	22	22	14.5	22
Goldsboro, N. C.....	14	6	10	15.3	8-9
Kinston, N. C.....	14	23	28	15.9	23
Kinston, N. C.....	14	26	30	14.6	26
Cape Fear: Lock No. 3, Elizabethtown, N. C.....	20	22	23	20.7	22
EAST GULF OF MEXICO DRAINAGE					
Pearl: Pearl River, La.....	12	July 31	2	12.6	1
MISSISSIPPI SYSTEM					
Ohio basin					
West Fork: Clarksburg, W. Va.....	5	24	25	7.4	24
Scioto:					
Larue, Ohio.....	11	15	16	13.2	15
Prospect, Ohio.....	10	17	17	10.1	17
West Fork: Edwardsport, Ind.....	12	16	17	13.2	16
Lower Mississippi Basin					
St. Francis:					
Fisk, Mo.....	20	June 22	9	22.0	July 1-4
				20.2	Mar. 23
				20.3	Mar. 26
				21.9	Apr. 8
				23.4	Apr. 20
				21.5	May 3-5
				22.8	May 10
		Mar. 19	13	21.9	June 12
				20.1	June 18
St. Francis, Ark.....	18			19.5	July 6-7
				19.1	July 27-
					Aug. 1
			15	18.0	15
WEST GULF OF MEXICO DRAINAGE					
Brazos: East Columbia, Tex.....	30	31	-----	30.0	31

¹ Provisional.

CLIMATOLOGICAL DATA FOR AUGUST 1945

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature								Precipitation							
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly			
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount		
° F.	° F.	° F.				° F.	In.	In.	In.		In.					
Alabama.....	80.3	+0.5	Greensboro.....	102	31	Gadsden.....	50	27	3.06	-1.60	Lockhart.....	8.16	Uniontown.....	0.05		
Arizona.....	79.5	+1.9	Mohawk.....	115	23	Copper Mine.....	32	29	2.45	+1.12	Helvetia.....	7.48	Tal-Wi-Wi.....	.05		
Arkansas.....	78.9	-1.2	Morrilton.....	104	13	3 stations.....	48	26	3.16	-1.42	Dermott.....	10.53	Beaty Lake.....	.16		
California.....	72.0	-3.3	Greenland Ranch.....	123	24	Ellery Lake.....	30	30	.46	+1.36	Warner Springs.....	8.06	93 stations.....	.00		
Colorado.....	67.0	+1.3	Eversoll Ranch.....	104	13	Pearl.....	24	22	3.23	+1.29	Guffey.....	10.44	2 stations.....	.56		
Florida.....	81.6	+1.1	3 stations.....	99	17	Belle Glade.....	61	3	8.40	+1.36	Clearwater.....	21.80	Nittaw.....	1.36		
Georgia.....	78.8	-1.7	Cedartown.....	99	31	Blairsville.....	50	29	4.53	-1.70	Brunswick.....	14.45	Carrollton.....	.40		
Idaho.....	67.1	+1.8	Grand View.....	106	23	Landmark.....	20	27	.78	+1.15	Driggs.....	3.90	3 stations.....	.00		
Illinois.....	74.2	-1.4	Quincy.....	103	11	2 stations.....	41	26	3.47	+1.10	Galatia.....	15.02	Beardstown, 8 mi. s. w.21		
Indiana.....	73.0	-1.6	Bloomington.....	100	31	Frankfort.....	35	26	3.60	+1.26	New Harmony.....	9.95	Berne.....	1.00		
Iowa.....	72.5	+1.3	Keosauqua.....	102	1	Decorah.....	41	24	3.43	-1.20	Bancroft.....	8.17	Winterset.....	.56		
Kansas.....	78.5	+1.5	2 stations.....	110	13	St. Francis.....	44	22	2.35	-1.83	Neosho Rapids.....	10.05	Lincoln.....	.14		
Kentucky.....	75.5	-1.4	Dix Dam.....	103	31	Farmers.....	40	27	2.47	-1.23	Uniontown.....	5.57	Russellville.....	.28		
Louisiana.....	81.3	-1.6	Plain Dealing.....	102	4	Tallulah.....	59	26	5.10	-1.08	Houma.....	15.20	Winnsboro.....	1.18		
Maryland-Delaware.....	72.5	-1.0	Fort George G. Meade.....	99	30	Oakland, Md.....	34	27	3.92	-1.57	Wilmington, Del.....	10.67	La Plata, Md.....	.90		
Michigan.....	67.3	+1.3	2 stations.....	96	20	Watersmeet.....	27	26	3.23	+1.45	Manistee.....	7.20	Harrisville.....	1.07		
Minnesota.....	67.9	+1.3	Argyle.....	100	18	Red Lake Falls.....	32	25	3.57	+1.26	Hastings Dam.....	9.49	Wells.....	.99		
Mississippi.....	80.3	-1.5	2 stations.....	101	13	Duck Hill.....	47	27	2.67	-1.51	Yazoo City.....	6.74	Pelahatchee.....	.06		
Missouri.....	76.8	+1.2	3 stations.....	103	11	Black (near).....	45	27	2.08	-1.74	Cape Girardeau.....	8.27	Kansas City (Airport).....	.26		
Montana.....	66.4	+1.4	2 stations.....	104	7	Summit.....	23	20	.80	-1.28	Northeast Entrance.....	3.25	Seeley Lake.....	.01		
Nebraska.....	73.7	+1.3	Beaver City.....	106	17	2 stations.....	37	22	2.65	-1.05	Nebraska City.....	6.78	Franklin.....	.68		
Nevada.....	71.1	+1.4	Overton.....	112	23	Sheldon.....	23	26	1.05	+1.56	Hiko.....	6.15	3 stations.....	.00		
New England.....	67.2	+1.1	Vanceboro, Maine.....	98	12	2 Stations.....	32	24	2.70	-1.03	New Haven, Conn.....	6.16	Woodstock, N. H.....	.54		
New Jersey.....	71.2	-1.8	Flemington.....	97	29	Bonnton.....	40	25	4.37	-1.35	Belleplain.....	7.63	Toms River.....	1.97		
New Mexico.....	72.6	+1.8	3 stations.....	108	18	Selsor Ranch.....	30	26	2.63	+1.19	Capulin.....	8.70	Fruitland.....	.41		
New York.....	68.2	+1.5	do.....	95	10	2 stations.....	35	27	2.56	-1.14	Babylon.....	6.70	2 stations.....	.45		
North Carolina.....	75.0	-1.9	Reidsville.....	99	15	do.....	38	26	4.76	-1.76	Beaufort.....	15.61	Reidsville.....	.67		
North Dakota.....	67.1	+1.6	Carson.....	105	18	do.....	32	25	1.68	-1.40	Almont.....	3.84	Bowman.....	.16		
Ohio.....	71.6	-1.2	Caldwell.....	99	31	Millport.....	37	27	1.98	-1.40	Larue.....	5.84	Oberlin.....	.62		
Oklahoma.....	80.3	-1.3	Alva.....	111	13	Watts.....	49	28	2.58	-1.34	Carter Tower.....	7.97	Tulsa Airport.....	.21		
Oregon.....	65.6	+1.3	2 stations.....	105	15	2 stations.....	23	20	.33	-1.09	Crescent.....	2.09	7 stations.....	.00		
Pennsylvania.....	69.3	-1.0	do.....	99	130	Greenville.....	34	27	3.79	-1.37	West Grove.....	8.82	Beaver Falls.....	.78		
South Carolina.....	77.8	-1.1	4 stations.....	99	13	2 stations.....	52	27	5.82	+1.13	Conway.....	12.09	Greenwood.....	1.55		
South Dakota.....	71.3	+1.3	2 stations.....	108	19	Custer.....	30	22	2.13	.00	Hardy Ranger Station.....	7.28	Bison.....	.00		
Tennessee.....	76.7	-1.1	Clarksville.....	102	2	Rugby.....	42	27	3.14	-1.89	Newport.....	7.30	Memphis.....	.52		
Texas.....	82.6	-1.2	Gatesville.....	112	18	Mount Locke.....	51	23	3.55	+1.18	Danewang.....	24.01	2 stations.....	.00		
Utah.....	70.1	+1.3	2 stations.....	104	19	Coalville.....	32	31	2.28	+1.23	2 stations.....	5.40	Delta Airport.....	.44		
Virginia.....	73.1	-1.0	4 stations.....	98	15	Burkes Garden.....	33	27	3.00	-1.43	Berryville.....	6.87	Dahlgren.....	.45		
Washington.....	66.8	+1.0	Richland.....	106	6	Newport.....	27	20	.44	-1.33	Paradise Ranger Station.....	2.20	3 stations.....	.00		
West Virginia.....	71.0	-1.8	6 stations.....	98	22	2 stations.....	31	27	3.72	-1.39	Hackers Creek.....	9.23	Branchland.....	.75		
Wisconsin.....	68.3	+1.6	2 stations.....	95	19	Laona.....	29	26	4.79	+1.41	Cherokee.....	9.18	Sparta.....	1.85		
Wyoming.....	65.3	+1.2	Arvada.....	102	2	Snake River.....	23	28	1.85	+1.77	Grassy Lake Dam.....	4.62	Nine Mile Creek.....	.27		
Alaska (July).....	54.5	-1.0	Skwentha.....	87	7	Point Lay.....	27	1	3.45	+1.79	Little Port Walter.....	27.08	Point Hope.....	.30		
Hawaii.....	70.4	+1.5	2 stations.....	92	12	Haleakala R. S.....	41	10	+1.47	Kukui.....	59.00	6 stations.....	.00		

1 Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR AUGUST 1945

District and station	Elevation of instruments			Pressure		Temperature of the air										Precipitation			Wind																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal		Mean		Departure from normal		Maximum	Date	Mean minimum		Minimum	Date	Mean minimum		Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Total	Departure from normal		Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Miles per hour	Direction	Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Eastport	75	67	85	1,012.5	1,015.2	+0.6	67.8	+0.7	82	11	60	49	2	54	29	121	54	83	2.56	-1.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR AUGUST 1945—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air							Precipitation			Wind					Total degree days	Mean temperature of the dew point	Mean relative humidity	Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Departure from normal	Maximum	Date	Mean minimum	Minimum	Date	Mean minimum	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity										Prevailing direction	Miles per hour								Direction	Date																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR AUGUST 1945—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air										Precipitation			Wind														
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean					Maximum					Total	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder-storms			
							° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.						Miles per hour	Direction								Date		
MIDDLE SLOPE	Fl.	Fl.	Fl.	Mb.	Mb.	Mb.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	%	In.	In.	In.	Mi.												
Denver ¹	5,292	106	113	841.5	1,014.9	+1.7	71.8	+1.1	94	18	83	48	21	60	37	17	53	64	1.44	.0	.41	14	6.5	s.	35	nw.	8	7	17	7	5.3	.0	14
Pueblo ¹	4,690	5	36	859.8	1,014.9	+2.0	72.6	-.1	95	19	87	50	28	58	39	10	56	68	3.93	+2.1	1.95	11	6.7	se.	38	nw.	27	7	15	9	5.5	.0	14
Concordia ¹	1,392	50	58	966.1	1,014.2	-.0	78.2	+1.7	101	4	89	55	22	67	33	3	64	68	1.55	-.4	.67	9	7.4	s.	25	sw.	28	15	11	5	4.3	.0	5
Dodge City ¹	2,509	5	58	928.5	1,013.5	-.0	78.4	+1.7	104	4	91	53	22	66	35	5	61	62	3.42	+.8	1.93	6	13.7	s.	49	nw.	6	15	9	7	4.1	.0	6
Wichita ¹	1,358	6	64	967.8	1,014.9	+1.0	79.1	+1.0	101	5	90	58	23	68	31	0	64	66	4.11	+1.0	2.16	6	12.3	s.	55	nw.	13	17	8	6	4.1	.0	8
Oklahoma City ¹	1,214	10	47	972.6	1,014.9	+1.0	80.4	-.3	100	18	90	63	24	70	26	0	66	68	3.43	+.5	2.69	3	7.5	s.	16	s.	13	19	5	7	3.8	.0	3
Tulsa ¹	674	10	60	991.2	1,014.9	-.0	80.4	-.3	99	17	91	60	24	69	30	0	67	71	.21	-.3	1.10	4	8.9	s.	34	ne.	18	14	10	7	4.3	.0	2
SOUTHERN SLOPE							81.4	+2.4									61	2.07	-.0														
Abilene ¹	1,738	4	59	953.9	1,012.5	-.7	82.0	+1.7	104	18	94	63	24	71	32	0	67	68	.75	-.1	.40	2	11.9	s.	33	se.	29	9	12	10	5.2	.0	3
Amarillo ¹	3,676	5	42	892.0	1,013.9	+1.7	77.4	+2.8	100	19	90	53	22	64	33	4	60	65	5.17	+2.1	4.26	9	13.1	s.	34	sw.	13	16	10	5	3.9	.0	8
Del Rio	960	63	71	979.0	1,010.8	-.1	78.6	+2.7	103	19	97	70	20	76	32	0	67	58	.57	-.2	.31	4	9.2	se.	30	nw.	20	11	19	1	4.4	.0	4
Roswell	3,566	75	85	894.0	1,012.9	+1.0	79.2	+2.6	101	19	92	58	26	66	36	0	57	54	1.79	-.4	1.14	7	7.3	s.	42	se.	20	16	7	8	4.5	.0	8
SOUTHERN PLATEAU							82.3	+2.3									52	2.14	+0.6														
El Paso ¹	3,778	39	85	886.6	1,010.2	-.3	81.5	+3.5	101	19	94	60	24	69	31	0	60	52	.84	-.9	.36	10	8.4	se.	34	e.	3	16	11	4	4.1	.0	10
Albuquerque ¹	5,314	5	45	840.2	1,010.8	-.7	78.2	+4.3	97	5	91	60	22	65	30	0	52	46	2.27	+1.0	.88	8	9.6	se.	39	s.	11	15	13	3	4.1	.0	11
Flagstaff	6,907	36	51	795.1	1,016.3	+5.8	67.2	+3.2	89	21	83	47	25	52	37	5	50	66	2.91	+2.0	.80	10	n.	---	---	---	---	---	---	---	---	---	
Tucson ¹	2,555	5	39	924.5	1,009.5	-.8	84.2	-.0	105	30	96	66	6	72	32	0	64	56	4.31	+2.0	1.47	12	---	---	---	---	---	---	---	---	---	---	
Yuma	142	9	54	1,003.4	1,007.5	-.3	92.0	+1.6	113	22	105	72	30	79	37	0	66	51	1.61	+1.1	1.35	3	5.1	s.	25	ne.	16	18	8	5	3.6	.0	5
MIDDLE PLATEAU							71.1	+0.4									43	1.70	+1.0														
Reno ¹	4,527	20	52	862.9	1,013.2	+2.7	67.6	+1.9	99	1	90	36	26	46	54	26	40	49	.23	-.0	.17	2	6.3	nw.	31	w.	24	21	6	4	2.7	.0	1
Tonopah	6,090	9	20	816.1	1,011.0	-.7	69.9	-.2	102	1	82	46	26	58	33	11	39	38	1.39	+1.8	1.22	5	---	---	---	---	---	---	---	---	---	---	
Winnemucca	4,339	5	56	867.9	1,012.2	+3.3	70.8	+1.5	97	1	90	40	26	52	51	14	36	34	.25	-.0	.13	4	7.1	sw.	25	nw.	29	21	4	6	3.0	.0	5
Modena	5,473	10	46	835.8	1,012.5	+1.3	68.8	-.4	92	23	84	43	28	53	47	3	---	---	3.39	+2.1	1.07	12	8.4	sw.	30	nw.	10	14	11	6	4.2	.0	10
Salt Lake City ¹	4,227	32	58	868.3	1,012.2	-.7	73.5	+1.7	94	1	87	48	27	60	40	1	50	50	3.28	+2.4	1.47	13	10.2	se.	49	w.	19	11	17	3	4.3	.0	15
Grand Junction	4,602	60	68	861.2	1,013.9	+1.4	76.2	+1.8	97	19	88	58	28	64	33	0	51	46	1.63	+.5	.52	13	6.4	se.	29	nw.	14	12	12	7	4.9	.0	16
NORTHERN PLATEAU							71.5	+2.4									44	0.47	0.0														
Baker ¹	3,471	36	54	895.7	1,014.6	+4.4	66.5	+1.9	95	22	85	39	26	48	48	49	40	52	.43	-.1	.25	5	5.8	n.	28	w.	10	18	8	5	3.5	.0	4
Boise ¹	2,739	5	49	918.4	1,011.5	-.2	73.4	+2.4	99	24	89	42	26	58	42	16	38	32	.08	-.1	.08	1	9.2	nw.	38	s.	8	19	8	4	3.3	.0	1
Pocatello ¹	4,478	5	31	864.9	1,014.6	+1.4	69.8	+1.9	95	16	86	42	29	54	48	11	44	46	1.51	+1.0	.77	7	8.4	s.	47	nw.	30	12	15	4	3.8	.0	13
Spokane ¹	1,929	27	42	945.5	1,013.2	-.1	69.4	+1.3	96	6	86	40	20	53	46	24	44	47	.55	-.1	.32	5	6.5	ne.	26	sw.	18	18	10	3	3.0	.0	4
Walla Walla	991	57	65	977.7	1,012.5	-.2	75.5	+2.8	98	6	89	49	27	62	43	5	---	---	.06	-.4	.04	3	5.0	s.	20	e.	10	19	17	3	3.3	.0	4
Yakima	1,076	58	67	974.9	1,013.2	-.7	74.3	+4.8	98	8	88	48	26	60	39	8	---	---	.17	-.0	.17	2	6.8	nw.	21	n.	18	20	10	1	3.0	.0	2
NORTH PACIFIC COAST							64.0	+0.2									71	0.58	-.0														
North Head	211	5	55	1,010.5	1,017.6	+7.5	55.0	-.2	68	8	59	46	5	51	13	313	53	92	.34	-.7	.11	10	12.1	n.	34	n.	18	4	6	21	7.7	.0	1
Seattle ¹	125	90	321	1,012.5	1,016.6	+7.6	64.8	-.3	86	6	75	50	30	55	30	44	52	69	.33	-.4	.33	1	6.9	n.	22	s.	25	7	18	6	5.3	.0	0
Tacoma	194	172	201	1,010.2	1,016.6	-.0	63.3	+7.8	84	6	72	49	30	54	26	76	---	---	.62	-.1	.52	2	7.2	n.	20	sw.	24	10	17	4	7.8	.0	1
Tatoosh Island	86	9	61	1,015.2	1,018.0	+2.1	53.9	-.4	61	21	58	46	20	50	15	343	52	94	.96	-.1	.34	14	10.6	s.	27	s.	16	5	2	24	7.8	.0	0
Medford ¹	1,329	29	58	967.2	1,012.9	-.7	72.6	+1.5	101	21	91	45	26	55	46	6	48	50	1.13	+1.0	1.13	1	---	nw.	---	---	---	---	---	---	---	---	
Portland, Oreg. ¹	154	68	106	1,010.5	1,015.9	-.4	68.8	+2.1	96	5	79	52	30	58	34	14	54	65	.52	-.1	.49	4	6.8	nw.	17	nw.	4	11	11	9	4.9	.0	0
Roseburg	510	45	76	997.0	1,014.9	-.1	69.3	+1.3	100	21	84	45	30	54	46	7	51	58	.15	-.2	.09	2	4.6	n.	17	n.	3	19	9	3	3.5	.0	1
MIDDLE PACIFIC COAST							66.9	0.0									62	0.02	0.0														
Eureka	60	72	88	1,014.9	1,016.9	+1.0	55.6	-.4	70	20	60	48	20																				

SEVERE LOCAL STORMS FOR AUGUST 1945

[Compiled by MARY O. SOUDER]

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the UNITED STATES METEOROLOGICAL YEARBOOK]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Columbia, S. C., vicinity of.	August 1945 2	5 p. m.			\$1,000	Electrical	Portion of house demolished after being struck by lightning; 2 persons injured.
Madison County, N. Y.	2					Thunderstorm, high winds, and hail.	Unestimated damage reported south of Oneida Lake in Madison County. Small boats were blown 20 feet inland, fallen trees blocked highways, and power and communication lines were disrupted. Hail swept an area 4 miles wide and 10 miles long, beating down crops and damaging windows and roofs. Some measured hailstones were 5 inches in circumference.
Clinton and Gordon, Nebr., and vicinities.	3	8:45-9:30 p. m., M. W. T.	16		335,000	Tornadoic wind, hail, and rain.	Property destroyed, about \$135,000, over a path 35 miles long. Loss in crops from hail over a path 3 miles wide and 6 miles long, \$200,000.
Cherokee and Ida Counties, Iowa.	4				30,000	Heavy rain.	In Cherokee County 26 road bridges were washed away and some sections of railroad tracks washed out. Little Sioux and Maple Rivers, as well as many smaller streams, overflowed. Loss to shocked oats from flooding in Ida Grove, Iowa. No reliable estimate of total damage available.
Milwaukee Harbor, Wis.	5	a. m.		1		Wind.	Many sailing boats gathered for a regatta were loosened from their moorings. Only minor damage reported. Man drowned in afternoon when wind overturned his motorboat.
Grand Island, Nebr.	5	a. m.				Thunderstorm and heavy wind.	Considerable damage from lightning; streets flooded.
Owens Valley, Calif.	5	2:30 p. m.			5,000	Heavy rain.	Storm occurred in scattered portion of the Inyo's-Mono area, with the Darwin-Keeler area reported to have had heaviest damage. Disaster struck Keeler, one of southern Inyo's oldest communities when torrents of floodwaters, originating from a cloudburst in Cerro Gordo Canyon area, rushed through the entire town, causing heavy destruction and damage to homes, business houses, the main highway, streets, and the railroad. Loaded ore cars south of the old Cerro Gordo mill were turned over on the tracks and torn from the wheels. Gullies 4 feet deep were cut under the railroad tracks in this section, suspending them in the air. Southern Pacific narrow gage service at Keeler was suspended when tons of mud and gravel to the depth of 2 feet were deposited on the roadbed for a distance extending nearly a half mile in Keeler. Monday an emergency crew of 200 men arrived to clear the debris, and a train was dispatched late that night. An official of the California Electric Power Co. and Interstate Telegraph Co. reported intermittent trouble, for the most part the result of lightning striking lines.
New Jersey, southern portion.	6-7					Torrential rain and wind.	Reported that men were blown 100 yards and barns blown a mile; houses blown against uprooted trees, and attic windows sucked out. Much property damaged and several persons injured.
Chouteau County, Mont., from Carter to southeast corner of the county.	11				1,000,000	Hail.	The stones, ranging in size from peas to hen eggs, destroyed all grains, damaged roofs and farm equipment, broke windows, and killed poultry and small animals.
Abbyville, Kans., 6 miles north.	13	4:45 p. m.	880		10,000	High wind.	Buildings and trees damaged; path 3¼ miles long.
Kossuth County, Iowa.	13	8 p. m.			7,500	Heavy rain.	Several sections of roads washed out in the Algona-Irvington area. In Algona and vicinity there was \$5,000 damage to buildings, \$2,000 loss in crops, and \$300 to livestock.
Marshalltown, Iowa, vicinity of.	13	Near midnight				Thunderstorm.	Trees broken and uprooted; about 100 electric poles down, and telephone and electric service disrupted. Eight miles southwest of Marshalltown a barn was struck by lightning and burned.
Belle Plaine, Iowa.	13-14				5,000	Electrical.	Barn struck by lightning and burned.
Clinton, Iowa, and vicinities.	13-14					Rain and wind.	About 4 inches of rain fell in less than 3 hours, flooding streets and basements as sewers were overtaxed. Numerous creeks overflowed carrying trees, stumps, fences, hog troughs, etc. Much damage was caused to the footings and approaches of the new Mill Creek bridge, and 2 bridges in the city were washed out. Many houses in the lowlands flooded, subways blocked to traffic because of water, and many sections of pavement washed out. Tangible property destroyed or damaged and the cost of cleaning up mud, sand, etc., was \$522,000 mostly in the city of Clinton. Field and garden crop loss, \$13,000; livestock and movable equipment, \$500.
Sidney, Nebr., vicinity of.	14	6 a. m.			30,000	Windsquall.	Several buildings destroyed or damaged.
Greene County, Pa.	14	P. m.	50	0		Tornado.	Between 15 and 20 barns blown down and roofs taken off several homes. Several large trees uprooted.
Robeline, La.	16	7 p. m.				Wind.	2 barns destroyed, a garage damaged, and some timber uprooted; no estimate of damage received.
Howard County, Nebr., western portion.	16	p. m., C. W. T.	1-5		44,500	Heavy hail.	Loss chiefly to corn and small grain; path 24 miles long.
Adams and Webster Counties, Nebr.	16	9-9:30 p. m., C. W. T.	8-10		20,000	Hail.	Damage of from 50 to 75 percent on some farms. In Webster County loss in corn crop was \$20,000; some property damaged; path 50 miles long.
Burr Oak to Randall, Kans., and vicinities.	16	10-11 p. m.	12½		110,000	do.	Principal storm path west of Mankato and Jewell. Much loss in corn crop and gardens and extensive damage to roofs and windows. Path 30 miles long.
Haven, Kans., 4 miles north.	17	12:30 a. m.	1	0	6,000	Small tornado.	Buildings and trees damaged, \$5,000; loss in crops, \$1,000; path 3 miles long.
Grant County, Okla.	17	3-5 a. m.			50,000	Straight-line wind.	Storm started in Harper County, Kans., and extended over a path 40 miles long through Grant County, Okla. Property damage, \$35,000; crop loss, \$15,000.
Hartington and Coleridge, Nebr.	17	4 a. m., C. W. T.	16		20,000	Hail.	Damage mainly to corn and grain, but some glass and roofs damaged; path 12 miles long.
Salt Lake City Airport and Salt Lake City, Utah, and vicinities.	19				500,000	Hail, wind, and rain.	In addition a cloudburst occurred in the hills north of the city; property damaged.
Weyerhaeuser, Holcombe, and Stanley to extreme northwestern Clark County, Wis., and vicinities.	24	2:30-5 p. m., C. W. T.	12-5		88,000	Hail and wind.	An incredible amount of hail fell, some of it being the size of hen eggs. Hailstones were from 12 to 18 inches deep in some yards and from 6 to 8 inches deep in other places and on Highway No. 40. Loss in wheat and corn and other garden crops and in cranberries. Greatest single loss estimated at \$15,000 to cranberry vines and fruit in an 8-acre marsh. Many windows on north and west sides of farmhouses broken; roofs and automobiles damaged, and some poultry killed. Wind during this storm damaged few farmhouses and 10 or more barns and blew down 2 barns and several smaller farm buildings. One person was injured. Crop loss, \$75,000; property damage, \$13,000; path 45 miles long.

SEVERE LOCAL STORMS FOR AUGUST 1945—Continued

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Dolliva to Westly, Iowa, and vicinities.	August 1945 24					Rain and wind.....	Loss in corn from 10 to 80 percent, also in soy beans, flax, and gardens. No estimate of total loss available, but said to be heavy.
Zion National Park, Utah..	25				\$5,000	Cloudburst, hail and wind.	Damage to buildings and roads.
Corpus Christi, Tex., and vicinity.	26	P. m.				Tropical hurricane..	The center of the disturbance was 30 miles east of Corpus Christi, but wind already had reached a peak velocity of 101 miles per hour at the Naval Air Training Center just 10 miles to the south. Winds of 70 miles per hour or more extended outward as far as 50 miles to the east and north of the center, with winds up to 110 miles an hour over a small area. Estimate of loss not given.
Gage and Jefferson Counties, Nebr.	28	8-9 p. m., C. W. T.	11-4		30,000	Light to heavy hail..	Damage spotted, path 25 miles long.
Houston, Tex.	28	11:20 p. m.	75	1	35,000	Tornado.....	This tornado occurred at the time that the hurricane was centered in the area about 60 miles southwest of Houston and about the time that the maximum wind occurred at the city office.
Menomonie, Wis., vicinity of.	29	7-7:30 p. m., C. W. T.	1 1/2-3			Hail.....	As much as 85 percent crop loss including tobacco and corn; property damage small; path 25 miles long.
Swea City, Iowa, 2 miles south.	29		50-440	0		Tornadoic wind.....	Loss in corn and soybeans; path 2 miles long.
Cass County, Ind.	30	8:30 p. m.	12		50,000	Wind and hail.....	Property damage, \$30,000; loss in crops, \$20,000.
Frederick and Clarke Counties, Va.	30	9:30-11 p. m.	17		121,000	Hail, wind, electrical.	Loss chiefly to apples and corn, about \$110,000; property damage, \$5,000; property and livestock destroyed by lightning, \$6,000.
La Porte to Michigan City, Ind.	30				5,000	Hail.....	Some stones size of hen eggs.
Peru, Ind.	31				50,000	Electrical.....	Ordnance plant struck by lightning and burned.

¹ Miles instead of yards.

NOTE.—Corrections on this table for June 1945; page 100, last storm listed for 23d:

"West Virginia, north and north-central portions, etc.," should be deleted since this storm was printed in June 1944. Page 110: Hooppole, Ill., on the 27th; last sentence under Remarks, should read, "46 persons were injured," instead of killed.

SOLAR RADIATION AND SUNSPOT DATA FOR AUGUST 1945

[Solar Radiation Investigation Section, I. F. HAND, in charge]

SOLAR RADIATION OBSERVATIONS

Explanations of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the January 1944 REVIEW, page 43. A list of the pyrheliometric stations also is given on page 45 of the same REVIEW.

TABLE 1.—Solar radiation intensities during August 1945

[GRAM CALORIES PER MINUTE PER SQUARE CENTIMETER OF NORMAL SURFACE]

Date	Sun's zenith distance										75th mer. time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					P. M.					
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.

MADISON, WIS.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Aug. 6	19.6	0.54	0.66	0.81	1.07	1.36	cal.	cal.	cal.	19.0
Aug. 8	13.2	.80	.90	1.01	1.13	1.37	cal.	cal.	cal.	14.8
Aug. 9	13.7	.71	.83	.94	1.06	1.28	cal.	cal.	cal.	14.8
Aug. 17	15.8			.73			cal.	cal.	cal.	22.6
Aug. 22	14.8				1.11	1.36	cal.	cal.	cal.	13.2
Aug. 23	11.0	.74	.88	1.02	1.13	1.36	cal.	cal.	cal.	12.7
Aug. 24	11.0		.66	.88	1.02		cal.	cal.	cal.	13.5
Aug. 25	12.3	.74	.88	1.01	1.16	1.44	cal.	cal.	cal.	9.8
Aug. 30	21.8	.33	.41	.65	.83	1.17	cal.	cal.	cal.	27.7
Means		.64	.75	.88	1.06	1.33				
Departures		-.03	-.02	-.02	-.01	+.02				

LINCOLN, NEBR.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Aug. 1	23.4				1.14	0.88	0.67	0.52	0.41	23.4
Aug. 6	19.0				1.36	1.21	1.05	.90	.79	15.3
Aug. 11	23.4				1.36	1.12	.94	.82	.73	21.8
Aug. 16	18.3				1.29					19.0
Aug. 17	21.1				1.27	1.08	.86	.71	.58	28.6
Aug. 18	21.8				1.33					19.0
Aug. 24	14.6			.99	1.26	.99	.77	.62	.52	18.3
Aug. 25	15.3			.97	1.20					13.2
Aug. 27	16.4		.86	1.01	1.25					21.1
Aug. 28	19.0		.92	1.10	1.27	.97	.71	.56	.43	23.4
Aug. 29	20.4		.90	1.10	1.28	.97	.77	.64	.52	21.8
Aug. 30	19.6				1.30					21.1
Aug. 31	20.4		.84	1.01		1.08	.90	.77	.67	22.6
Means			.88	1.05	1.28	1.04	.84	.69	.58	
Departures			-.03	-.04	-.03	-.02	-.03	-.04	-.04	

ALBUQUERQUE, N. MEX.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Aug. 1	13.1					1.07	0.88	0.74	0.61	12.2
Aug. 2	9.8	0.69	0.80	0.92	1.08		.88	.76	.65	9.8
Aug. 3	11.0	.74	.84	.94	1.10	1.49				9.8
Aug. 4	9.5	.80	.88	.99	1.15	1.42	1.25	1.04	1.00	9.8
Aug. 5	8.8		.93	1.08	1.42	1.16		1.01		8.5
Aug. 6	10.2		.84	.96	1.10	1.42				9.8
Aug. 7	11.0	.57	.66	.77	.95					11.0
Aug. 9	12.2				1.02					13.6
Aug. 10	13.1	.60	.69	.79	1.04					13.6
Aug. 12	13.6	.71	.82	.92	1.11					13.1
Aug. 13	12.2		.84	.94	1.12	1.48				12.7

TABLE 1.—Solar radiation intensities during August 1945—Contd.

Date	Sun's zenith distance										75th mer. time
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	Air mass										
	A. M.					P. M.					
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.

ALBUQUERQUE, N. MEX.—Continued

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Aug. 14	11.4	.78	.88	.97	1.12	1.44					10.2
Aug. 15	11.4	.83	.91	1.02	1.16						10.6
Aug. 16	11.4	.78	.87	.99	1.14	1.44		1.19	1.14		10.2
Aug. 17	11.0		.85	.95	1.14	1.45	1.20	.86			9.5
Aug. 18	11.0	.75	.85	.95							11.4
Aug. 19	8.5		.90		1.04						9.8
Aug. 22	9.1				1.14						10.2
Aug. 24	9.5	.67	.78	.91			1.20		.97	.87	10.6
Aug. 25	9.1	.71	.80	.91	1.07	1.47	1.20	.98			7.9
Aug. 26	6.5	.61	.69	.83	1.01						7.0
Aug. 27	7.9				.98	1.51	1.00				8.5
Aug. 28	8.8	.59	.73	.88	1.06	1.41	1.13				7.9
Aug. 29	8.5	.59	.67	.83	1.02	1.38					9.5
Aug. 30	10.2	.61	.71	.84	1.03	1.38	1.11				10.6
Aug. 31	10.6	.57	.67	.80	.99	1.44					11.4
Means		.68	.79	.90	1.07	1.47	1.15	.96	.94	.78	
Departures		-.08	-.07	-.08	-.06	+.05	-.04	-.07	-.02	-.10	

BOSTON, MASS.

	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Aug. 10	17.7				1.04	1.01				19.0
Aug. 11	19.0				.80					19.6
Aug. 17	14.8				1.13					16.5
Aug. 20	14.2	0.65	0.66	0.69	.81					19.6
Means		(.65)	(.66)	(.69)	.94	(1.01)				
Departures		.00	+.07	-.12	+.05	-.28				

BLUE HILL, MASS.

Aug. 2	15.9	0.63	0.77	0.94	1.10						0.47	19.5
Aug. 4	14.6	.67	.76	.94	1.11	1.46						13.3
Aug. 5	11.5	.92	1.02	1.14	1.29	1.47	1.24	1.05	0.94	.86		14.9
Aug. 8	16.8	.79	.87	1.01			.89					16.2
Aug. 9	17.2	.77	.86	1.00	1.14							18.3
Aug. 10	15.9	.70	.82	.96	1.11			.83				16.6
Aug. 11	18.0	.54	.61	.72	.91		.92	.68	.49	.38		17.1
Aug. 12	19.3	.45	.54	.66	.86							20.4
Aug. 13	17.5						.95	.69	.57	.51		18.2
Aug. 16	11.0	.89	.98	1.10	1.27		1.20	1.04	.92	.80		12.0
Aug. 17	14.9				1.20				.78	.67		14.0
Aug. 18	13.3	.60	.70	.87								16.5
Aug. 19	16.8				1.51	1.24	1.06	.94	.87			10.9
Aug. 20	10.5	.65	.76	.88	1.03		.70	.44	.32	.25		16.9
Aug. 21	19.8	.30	.38	.51	.70							22.4
Aug. 27	13.5		.86	1.01				1.02				13.7
Aug. 29	19.0				1.40	.93				.29		20.4
Means		.66	.76	.90	1.07	1.46	1.01	.85	.71	.67		
Departures		+.01	-.02	+.02	+.03	+.16	-.02	.00	+.02	-.03		

RATIO, BOSTON/BLUE HILL, ON COMPARABLE DATES

	1.00	0.87	0.78	0.89						

*Extrapolated.

TABLE 2.—Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface

[Gram calories per square centimeter]

Date	Washington, D. C.	Madison, Wis.	Lincoln, Nebr.	East Lansing, Mich.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	State College, Pa.	Put-in-Bay, Ohio	East Wareham, Mass.	Davis, Calif.	Boulder, Colo.	Tonoco, Utah	New Orleans, La.
1945	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.	Cal.
July 30.....	415	328	624	473	339	674	411	688	600	407	648	543	579	637	558	323	580	578	725	379	743	440
July 31.....	408	590	656	309	102	668	99	665	556	584	650	301	423	597	540	380	451	634	715	410	762	468
August 1.....	422	562	610	300	179	675	401	673	320	526	618	220	314	313	400	233	592	455	698	397	671	564
August 2.....	402	515	397	481	328	397	204	636	537	500	484	585	444	510	650	442	607	551	680	451	700	598
August 3.....	410	725	260	463	392	629	127	247	431	484	495	608	598	434	286	652	658	198	696	406	425	524
August 4.....	687	521	495	584	584	663	152	462	479	554	664	594	626	531	602	675	684	504	643	338	668	568
August 5.....	587	138	441	66	677	642	460	646	678	340	634	606	481	710	658	605	256	686	678	330	550	583
Means.....	476	483	498	382	372	621	265	574	514	485	599	487	495	533	528	473	547	515	691	387	646	535
Departures.....	-7	+2	-18	-65	-92	-41	-83	+38	+83	+43	+30	-55	-61	+25	+4	-14	+23	+46	-17	-108	-----	+103
August 6.....	167	697	606	378	26	598	456	368	145	159	230	523	594	173	137	88	426	224	717	142	622	393
August 7.....	570	399	598	319	408	662	258	620	122	478	427	609	633	102	178	382	264	180	707	344	778	614
August 8.....	621	730	262	552	297	675	477	612	506	489	352	638	662	601	570	609	677	580	684	416	649	403
August 9.....	535	688	383	542	612	666	222	549	582	632	614	289	631	584	609	663	639	620	688	463	739	620
August 10.....	629	374	346	478	575	654	474	182	530	574	485	394	574	619	604	600	587	630	667	638	712	428
August 11.....	585	505	603	119	508	679	265	567	524	379	508	166	182	608	551	576	238	595	705	522	688	546
August 12.....	528	661	530	379	431	690	229	566	481	481	409	273	639	545	542	314	459	590	697	349	300	369
Means.....	519	579	471	395	408	661	340	405	413	456	445	413	559	462	456	470	470	488	695	410	641	486
Departures.....	+64	+107	-22	-51	-10	+29	+12	-41	-21	+10	-104	-103	+29	-30	-36	-19	-39	+26	0	-76	-----	+61
August 13.....	410	504	418	434	379	679	407	476	547	611	590	424	674	598	604	572	543	617	688	496	749	484
August 14.....	503	542	571	138	441	663	281	433	469	581	581	604	661	510	528	538	329	559	682	406	610	344
August 15.....	497	602	473	534	256	652	273	657	213	244	592	505	636	236	254	477	533	235	681	584	746	403
August 16.....	645	508	538	442	640	642	342	627	614	582	616	409	584	648	638	658	546	668	681	550	752	308
August 17.....	445	505	565	434	400	529	300	628	464	579	547	443	284	543	481	602	562	511	612	431	530	236
August 18.....	444	633	564	477	411	378	488	406	548	603	286	126	210	621	554	411	576	582	328	408	532	654
August 19.....	446	590	535	508	589	569	432	611	481	597	211	420	342	639	371	446	634	474	623	354	505	638
Means.....	484	555	523	424	445	588	360	548	477	542	489	419	484	542	490	529	532	521	614	461	632	438
Departures.....	+40	+101	+34	-4	+51	-28	+48	+46	+66	+92	-28	-66	-41	+62	+28	+62	+46	+73	-46	+10	-----	+31
August 20.....	484	606	427	403	366	637	387	592	512	563	590	204	579	581	583	542	538	587	652	79	726	322
August 21.....	571	304	233	279	411	608	325	436	513	543	584	372	600	514	478	462	529	524	652	73	738	408
August 22.....	492	646	422	434	502	612	171	482	425	274	576	386	578	380	345	554	546	356	665	278	730	124
August 23.....	103	642	412	485	143	612	130	675	334	350	477	268	575	291	164	209	368	187	648	509	689	143
August 24.....	76	604	527	452	30	626	345	627	70	334	509	457	581	65	62	82	397	76	664	508	574	318
August 25.....	447	676	420	409	154	642	83	615	67	500	568	367	612	80	80	318	441	99	657	368	717	459
August 26.....	640	601	508	550	246	631	224	603	440	651	582	497	639	461	458	587	623	373	633	421	725	552
Means.....	402	583	421	443	265	624	238	576	337	468	555	364	595	339	310	393	402	315	653	328	700	332
Departures.....	-22	+139	-49	+49	-107	+26	-48	+101	-41	+34	+27	-148	+75	-142	-145	-56	+35	-127	+12	-92	-----	-64
August 27.....	641	604	488	470	602	616	104	630	394	615	566	582	630	420	449	546	532	395	608	396	730	550
August 28.....	609	320	499	267	492	620	112	626	468	552	561	437	553	489	506	558	570	525	502	509	714	559
August 29.....	564	493	502	226	463	611	79	585	483	558	481	435	412	519	504	498	355	531	599	403	661	541
August 30.....	512	574	484	451	403	608	149	528	240	513	507	589	620	302	380	408	507	372	619	464	692	480
August 31.....	523	423	456	297	408	590	93	502	317	539	532	483	558	338	446	505	427	425	611	567	688	508
September 1.....	551	488	472	140	490	315	228	-----	405	538	521	448	497	395	220	448	447	190	591	515	600	457
September 2.....	387	599	462	466	170	503	259	-----	125	546	553	367	225	116	137	385	512	126	613	305	518	584
Means.....	541	500	480	331	433	552	146	-----	347	552	532	477	499	369	377	478	464	366	592	451	658	526
Departures.....	+118	+89	+40	-35	+81	-18	-97	-----	+1	+142	+40	-8	+12	-41	-48	+62	+34	-49	-20	-7	-----	+110

ACCUMULATED DEPARTURES ON SEPTEMBER 2, 1945

+3,276	+8,974	-5,271	-4,403	-6,811	+560	-3,164	-----	-2,149	-1,813	-8,239	-14,658	+5,558	-5,929	-7,819	+3,129	+1,736	-840	-854	-----	-----	-----	-----
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POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
AUGUST 1945

By LUCY T. DAY

[Equatorial Division, U. S. Naval Observatory]

Communicated by Commodore J. F. Hellweg, U. S. N. (Ret.) Superintendent, U. S. Naval Observatory. All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day, under longitude, latitude, area of spot or group, and spot count are included assumed longitude of center of the disk, assumed latitude of center of the disk, total area of spots and groups, and total spot count]

Date	East- ern stand- ard time	Mount- Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- i- tude	Dis- tance from center of disk				
1945 Aug. 1	h m		°	°	°	°				
	10 46	7807	-22	236	+24	28	12	1	F	U. S. Naval.
		7807	-19	239	+23	26	12	1		
		7805	+3	261	+16	10	97	1		
			(258)	(+6)			121	3		
2	12 32	7810	-37	206	-20	46	6	1	F	Do.
		7807	-3	240	+24	19	6	3		
		7807	+2	245	+24	18	12	1		
		7805	+17	260	+17	21	97	1		
		7809	+38	281	+35	46	12	2		
			(243)	(+6)			133	8		
3	10 22	7811	-79	152	-16	80	24	2	F	Do.
		7807	+4	235	+24	18	12	1		
		7807	+7	238	+23	19	16	1		
		7805	+29	260	+17	31	97	1		
			(231)	(+6)			149	5		
4	10 32	7811	-67	151	-18	71	12	3	G	Do.
		7811	-66	152	-15	69	6	1		
		7811	-64	154	-17	68	61	2		
		7805	+40	258	+18	41	24	5		
		7805	+42	260	+17	43	73	1		
		7809	+61	279	+34	65	6	2		
			(218)	(+6)			182	14		
5	11 7	7812	-70	135	-18	73	12	1	G	Do.
		7811	-54	151	-19	60	61	1		
		7811	-51	154	-17	57	36	4		
		7805	+54	259	+17	55	6	1		
		7805	+55	260	+18	56	24	1		
			(205)	(+6)			139	8		
6	9 19	7813	-85	107	+22	85	194	2	G	Mt. Wilson.
		7812	-59	133	-17	63	24	4		
		7811	-43	149	-18	50	48	1		
		7811	-41	151	-18	48	6	1		
		7805	+67	259	+18	67	36	1		
			(192)	(+6)			308	9		
7	10 31	7813	-80	98	+22	80	48	1	G	U. S. Naval.
		7813	-74	104	+23	74	291	1		
		7812	-46	132	-16	51	12	2		
		7811	-29	149	-19	38	48	2		
		7805	+50	228	+30	53	12	3		
		7805	+80	258	+18	80	24	1		
			(178)	(+6)			435	10		
8	10 36	7813	-68	97	+22	69	48	1	G	Do.
		7813	-60	105	+23	61	24	2		
		7813	-59	106	+23	60	291	1		
		7814	-42	123	+7	42	6	1		
		7811	-14	151	-19	28	12	2		
			(165)	(+6)			381	7		
9	10 38	7815	-70	82	-25	75	12	1	G	Do.
		7813	-52	100	+23	53	48	1		
		7813	-51	101	+22	53	36	1		
		7813	-45	107	+21	47	121	5		
		7813	-44	108	+23	46	218	10		
		7812	-22	130	-20	33	6	1		
		7812	-18	134	-18	31	12	4		
			(152)	(+6)			453	23		
10	10 35	7815	-57	82	-26	63	12	3	G	Do.
		7813	-40	99	+21	42	61	7		
		7813	-40	99	+25	43	24	5		
		7813	-31	108	+23	34	206	5		
		7813	-31	108	+21	33	97	7		
		7812	-9	130	-21	29	12	4		
			(139)	(+6)			412	31		

See footnotes at end of table.

668327-45-2

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
AUGUST 1945—Continued

Date	East- ern stand- ard time	Mount- Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- i- tude	Dis- tance from center of disk				
1945	h m		°	°	°	°				
11	10 32	7815	-54	72	-28	63	6	1	F	U. S. Naval.
		7815	-45	81	-25	54	6	1		
		7813	-28	98	+24	33	121	10		
		7813	-27	99	+21	31	48	1		
		7813	-24	102	+22	27	48	10		
		7813	-17	109	+21	23	24	3		
		7816	+2	128	-15	21	12	3		
		7812	+4	130	-22	29	12	3		
			(126)	(+6)			277	32		
12	10 30	7819	-80	32	+20	80	6	1	F	Do.
		7819	-75	37	+21	75	6	1		
		7815	-39	73	-26	50	6	3		
		7813	-15	97	+25	25	73	8		
		7813	-12	100	+22	20	24	1		
		7813	-10	102	+23	20	100	10		
		7813	-6	106	+22	17	121	3		
		7818	-5	107	-16	23	12	2		
		7818	-3	109	-16	24	12	1		
		7817	+61	173	+24	62	48	2		
			(112)	(+7)			417	32		
13	10 47	7819	-60	39	+22	61	6	2	VG	Do.
		7815	-29	70	-26	43	6	1		
		7815	-25	74	-26	40	6	2		
		7820	-20	79	+25	27	12	1		
		7813	-2	97	+25	19	339	25		
		7813	+3	102	+24	18	194	16		
		7813	+7	106	+22	17	145	3		
		7817	+75	174	+23	75	12	2		
		7817	+78	177	+24	78	12	1		
			(96)	(+7)			732	53		
14	11 56	7822	-80	5	+18	80	97	2	VG	Do.
		7822	-78	7	+19	78	97	1		
		7821	-30	55	-19	39	12	4		
		7821	-27	58	-19	37	12	2		
		7815	-10	75	-26	35	12	1		
		7820	-7	78	+25	20	12	1		
		7815	-6	79	-26	35	6	2		
		7813	+13	98	+27	25	533	22		
		7813	+17	102	+25	25	242	19		
		7813	+20	105	+22	24	97	6		
		7812	+45	130	-21	53	16	4		
			(85)	(+7)			1,136	64		
15	10 0	7822	-65	8	+19	65	85	1	F	Do.
		7815	+4	77	-25	33	12	1		
		7815	+8	81	-25	34	6	1		
		7813	+24	97	+26	29	388	15		
		7813	+30	103	+24	34	291	12		
		7813	+32	105	+21	33	73	13		
			(73)	(+7)			855	43		
16	11 9	7822	-51	8	+19	51	24	2	F	Do.
		7813	+36	95	+27	40	339	6		
		7813	+37	96	+30	42	12	1		
		7813	+43	102	+25	45	339	10		
		7813	+45	104	+23	46	48	2		
			(59)	(+7)			762	21		
17	10 22	7822	-39	7	+19	40	12	1	G	Do.
		7813	+48	94	+27	50	315	4		
		7813	+57	103	+25	57	194	8		
		7813	+59	105	+22	59	24	2		
			(46)	(+7)			545	15		
18	10 20	7822	-25	8	+19	27	12	1	G	Do.
		7823	+54	87	-23	60	48	3		
		7813	+60	93	+27	61	291	2		
		7813	+69	102	+25	70	194	2		
			(33)	(+7)			545	8		
19	10 49	7824	-68	312	+28	69	12	1	F	Do.
		7823	+65	85	-25	70	24	3		
		7813	+72	92	+27	72	194	2		
		7813	+84	104	+25	84	97	3		
			(20)	(+7)			327	9		
20	10 26	7824	-55	312	+28	57	12	1	F	Do.
		7813	+87	94	+25	87	164	1		
			(7)	(+7)			206	2		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
AUGUST 1945—Continued

Date	East- ern stand- ard time	Mount- Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from cen- ter of disk				
1945	A		°	°	°	°				
21	11 45		None	None	None				(f)	Mt. Wilson.
22	11 15	7825	-23	317	-20	35	6	1	(f)	Do.
				(340)	(+7)		6	1		
23	9 56	7825	-7	320	-20	28	24	7	G	Do.
				(327)	(+7)		24	7		
24	10 41	7828	0	314	+27	20	6	1	F	Do.
		7825	+7	321	-20	28	16	3		
		7827	+49	3	-12	52	6	1		
		7827	+50	4	-11	53	12	2		
		7826	+66	20	-20	60	12	1		
				(314)	(+7)		52	8		
25	9 28	7825	+20	321	-20	33	24	4	G	Do.
				(301)	(+7)		24	4		
26	9 31	7829	-20	268	-20	41	12	1	F	Do.
				(288)	(+7)		12	1		
27	9 32			None	None				(f)	Do.
28	10 18	7830	-60	201	-17	64	24	1	G	U. S. Naval.
		7830	-57	204	-17	61	48	1		
				(261)	(+7)		72	2		
29	10 45	7830	-47	201	-17	52	24	6	G	Do.
		7830	-42	206	-17	49	48	4		
		7831	+59	307	+34	60	12	2		
				(248)	(+7)		84	12		
30	10 32	7830	-30	204	-16	38	6	1	G	Do.
		7830	-28	206	-17	37	24	4		
				(234)	(+7)		30	5		
31	10 57	7833	-70	151	-22	73	48	2	G	Do.
		7833	-68	153	-21	71	97	1		
		7830	-15	206	-17	28	12	1		
		7832	+40	261	-20	48	12	2		
				(221)	(+7)		169	6		

Mean daily area for 31 days=290

*Not numbered.

†Data from Mount Wilson charts.

VG=very good; G=good; F=fair; P=poor.

PROVISIONAL RELATIVE SUNSPOT NUMBERS
FOR JUNE 1945 AND AUGUST 1945

[Based on observations at Zurich except as indicated by an asterisk. Data furnished through the courtesy of Prof. W. Brunner, Swiss Federal Observatory, Zurich, Switzerland]

June 1945	Relative numbers	June 1945	Relative numbers	June 1945	Relative numbers
1.....	20	11.....	d35	21.....	62
2.....	10	12.....	d42	22.....	56
3.....	d22	13.....	50	23.....	48
4.....	8	14.....	53	24.....	39
5.....	22	15.....	53	25.....	a28
6.....	22	16.....	68	26.....	Mc25
7.....	23	17.....	a70	27.....	26
8.....	8	18.....	Eac67	28.....	23
9.....	Mc*19	19.....	59	29.....	19
10.....	a21	20.....	ad64	30.....	23

Mean, 30 days=36.2

August 1945	Relative numbers	August 1945	Relative numbers	August 1945	Relative numbers
1.....	a23	11.....	38	21.....	0
2.....	26	12.....	53	22.....	0
3.....	24	13.....	b63	23.....	8
4.....	23	14.....	70	24.....	16
5.....	19	15.....	71	25.....	8
6.....	17	16.....	51	26.....	0
7.....	d36	17.....	34	27.....	0
8.....	17	18.....	34	28.....	Ec9
9.....	30	19.....	34	29.....	10
10.....	35	20.....	*18	30.....	8
				31.....	20

Mean, 31 days=25.6

*Observed at Locarno.

a Passage of an average sized group through the central meridian.

b Passage of a large group through the central meridian.

c New formation of a group developing into a middle sized or large center of activity; E, on the eastern part of the Sun's disc; W, on the western part; M, in the central circle zone.

d Entrance of a large or average sized center of activity on the east limb.

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, August 1945

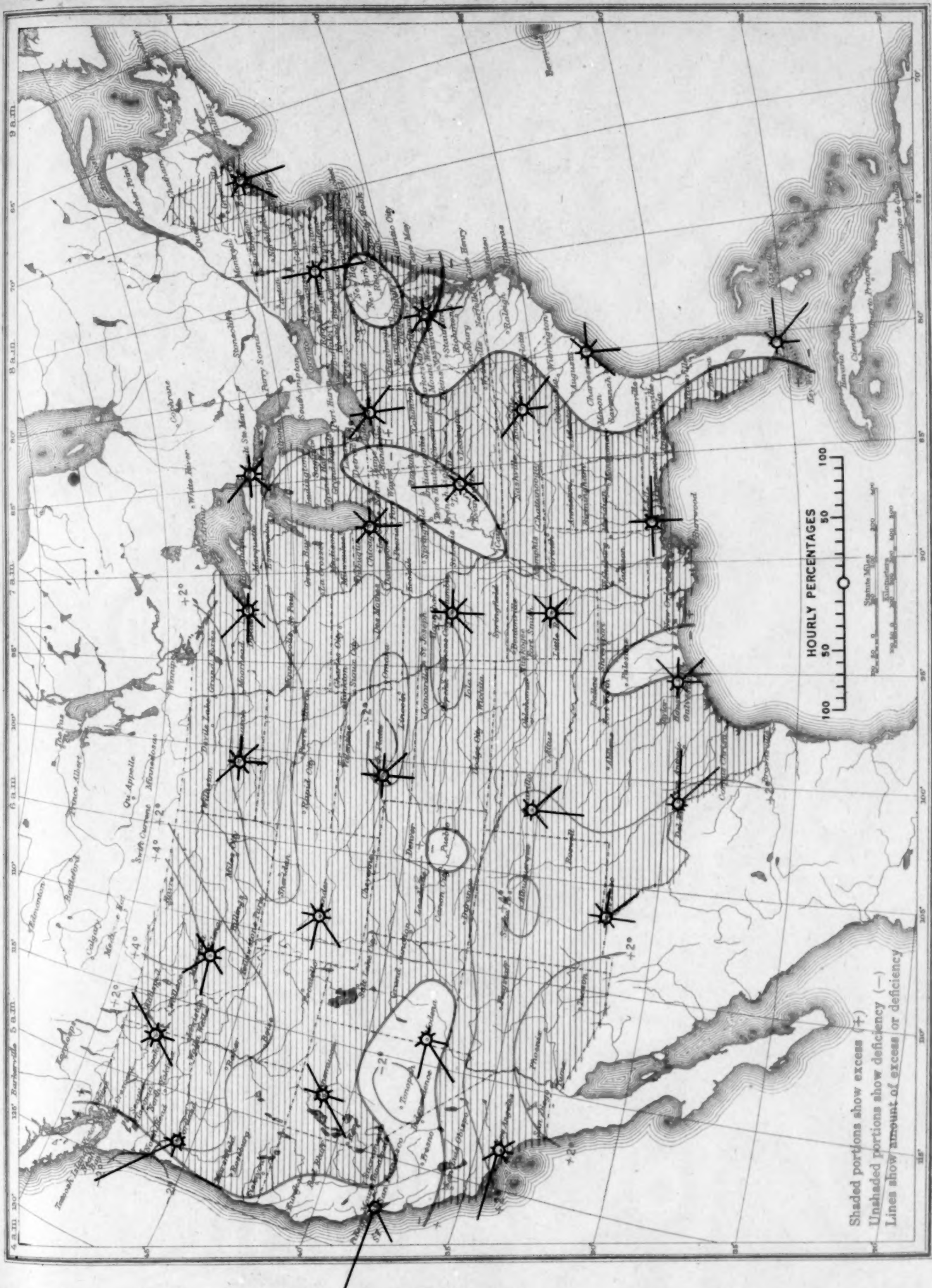
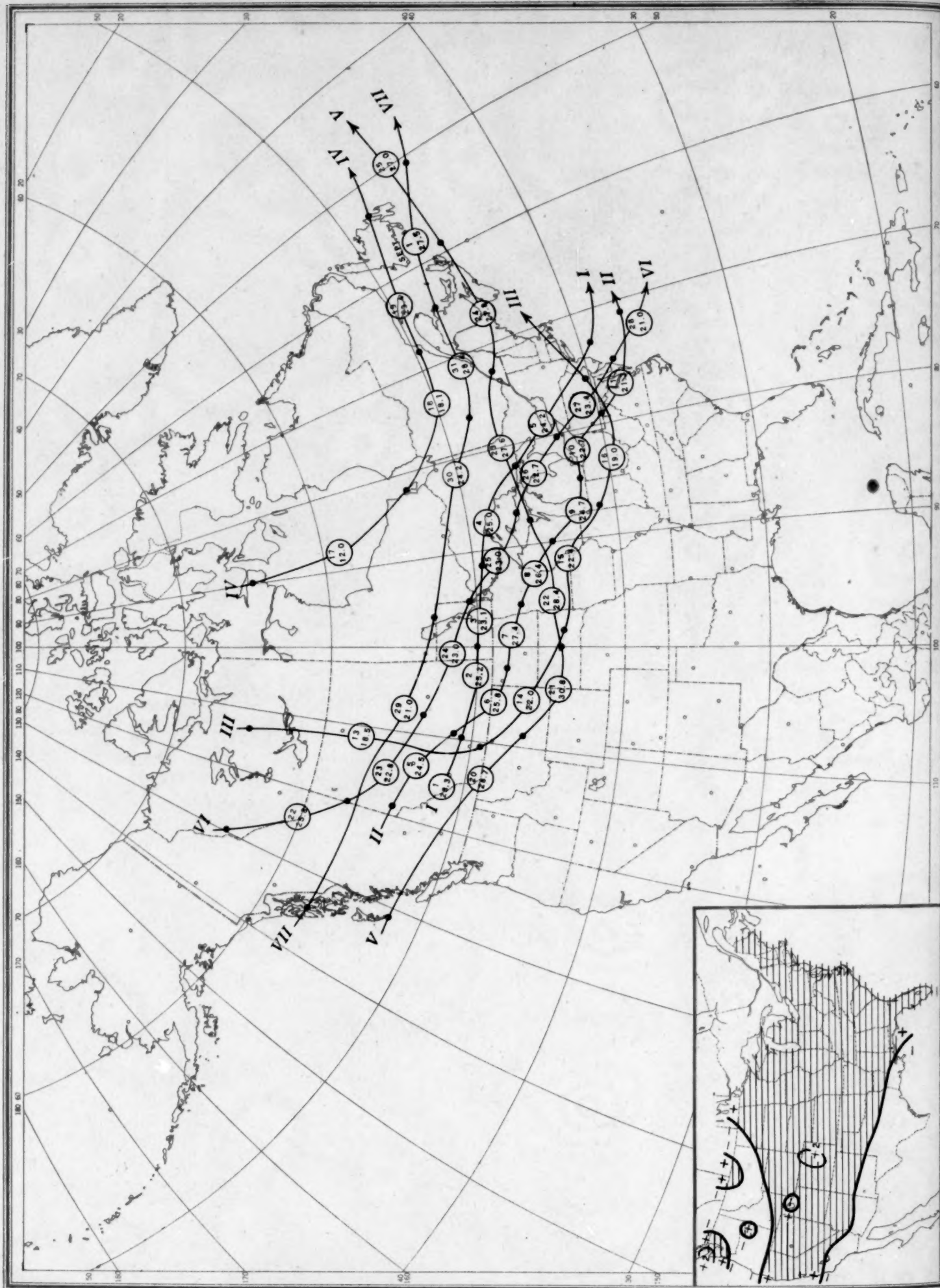


Chart II. Tracks of Centers of Anticyclones, August 1945. (Inset) Departure of Monthly Mean Pressure from Normal
(Plotted by D. R. Harris)

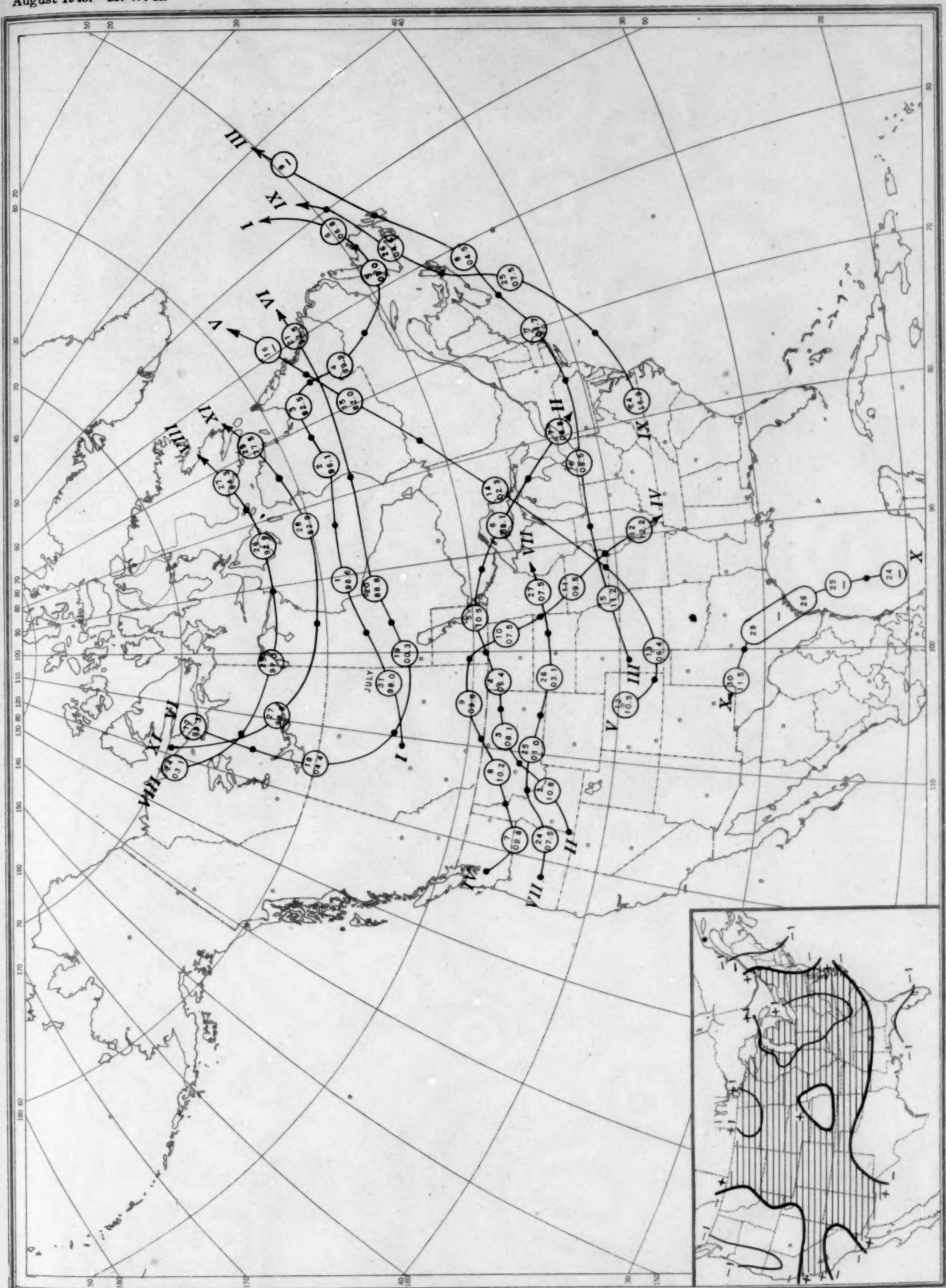


Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, August 1945. (Inset) Change in Mean Pressure from Preceding Month
(Plotted by D. R. Harris)

Chart III. Tracks of Centers of Cyclones, August 1945. (Inset) Change in Mean Pressure from Preceding Month

Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time). Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, August 1945

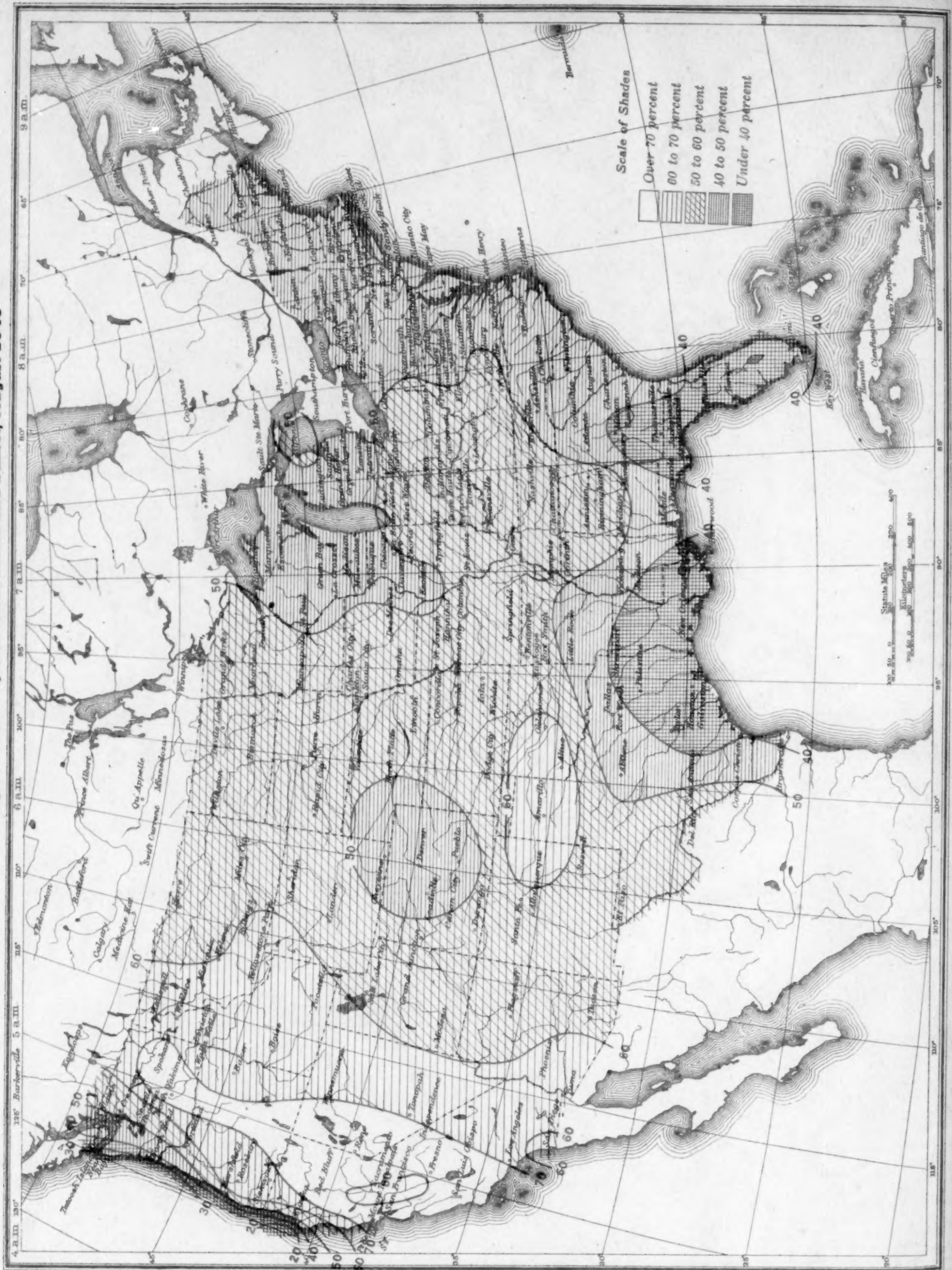


Chart V. Total Precipitation, Inches, August 1945. (Inset) Departure of Precipitation from Normal

Chart V. Total Precipitation, Inches, August 1945. (Inset) Departure of Precipitation from Normal

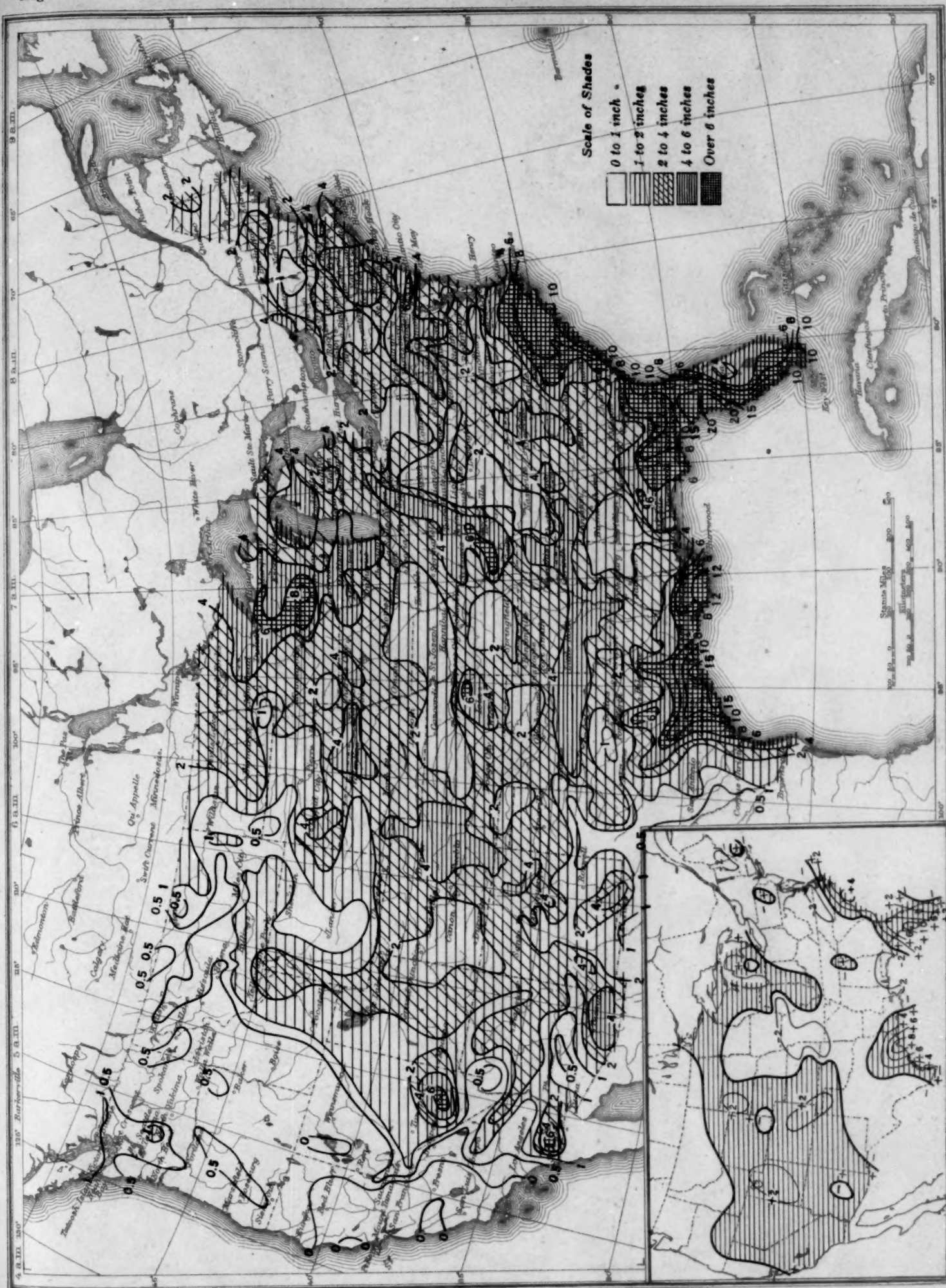


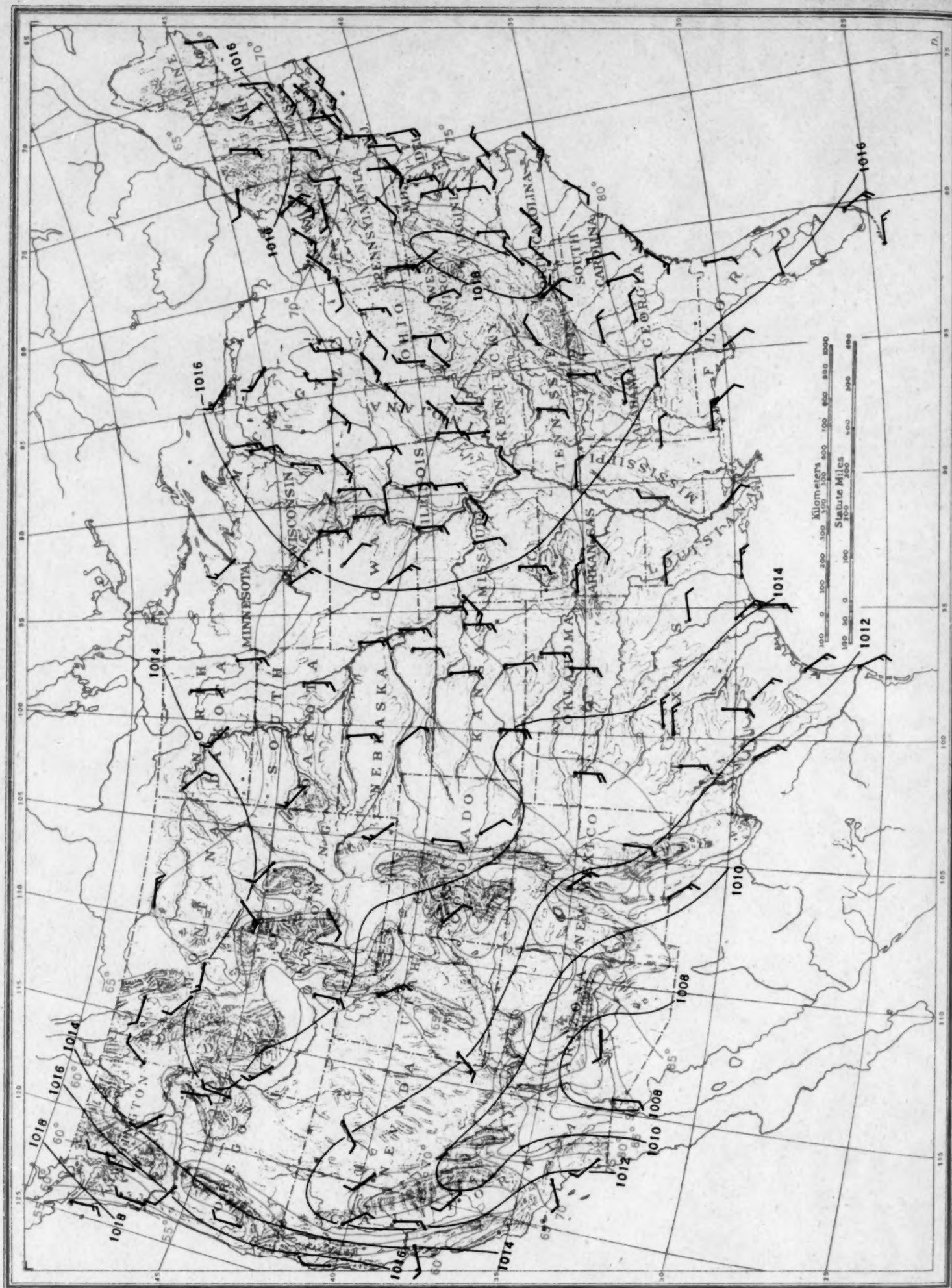
Chart VI. Isobars (mb), at Sea Level and Isotherms ($^{\circ}\text{F}$) at Surface; Prevailing Winds, August 1945

Chart VIII. Isobars (mb) for 1,524 Meters (5,000 ft.), and Isotherms ($^{\circ}\text{C}$), and Resultant Winds for 1,500 Meters (m. s. l.) August 1945
 Isotherms and isobars based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.)

Chart VIII. Isobars (mb) for 1,524 Meters (5,000 ft.), and Isotherms (°C.), and Resultant Winds for 1,500 Meters (m. s. l.) August 1945
Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).

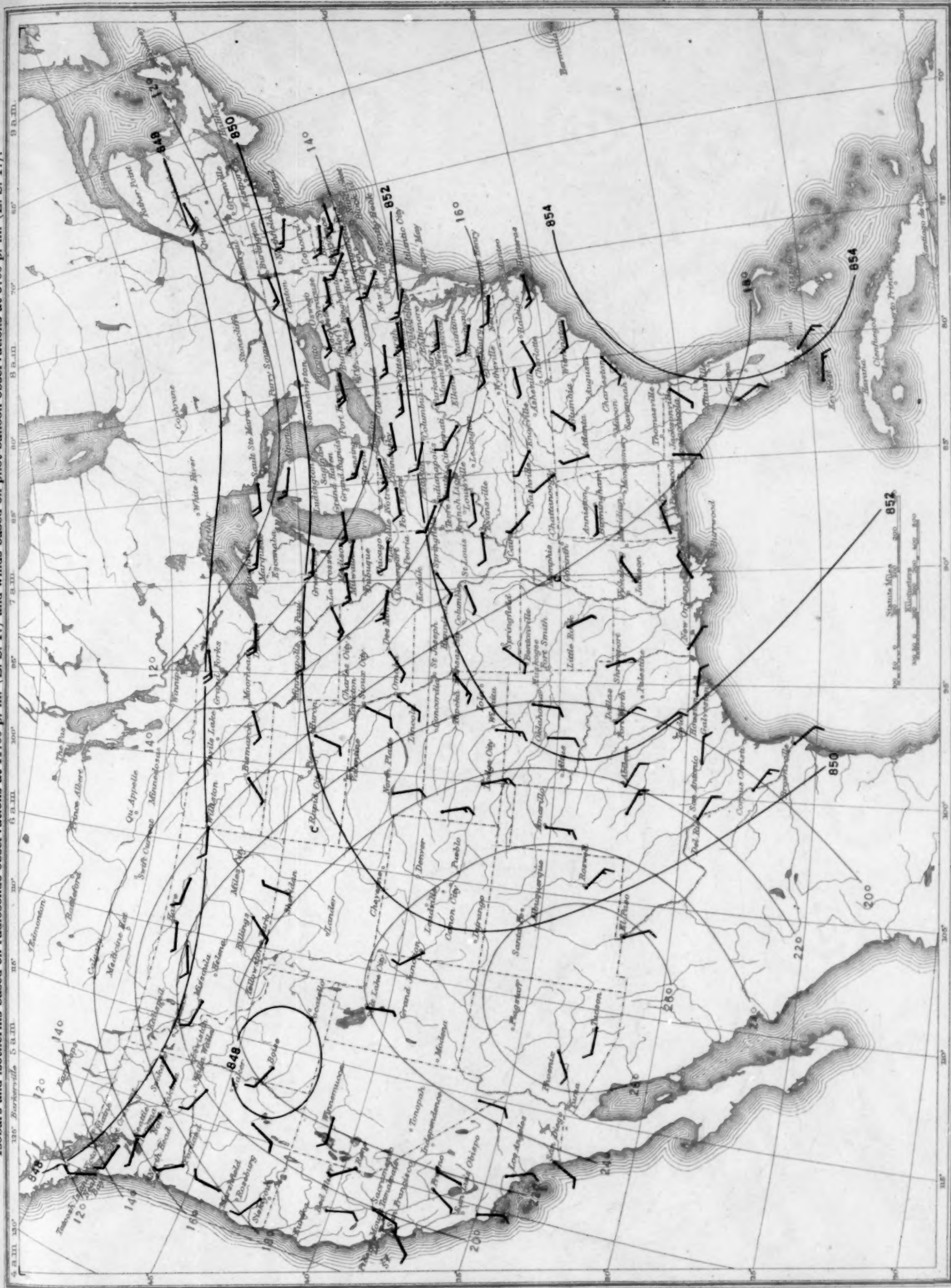


Chart IX. Isobars (mb), Isotherms ($^{\circ}\text{C}$), and Resultant Winds for 3,000 Meters (m. s. l.) August 1945
 Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).

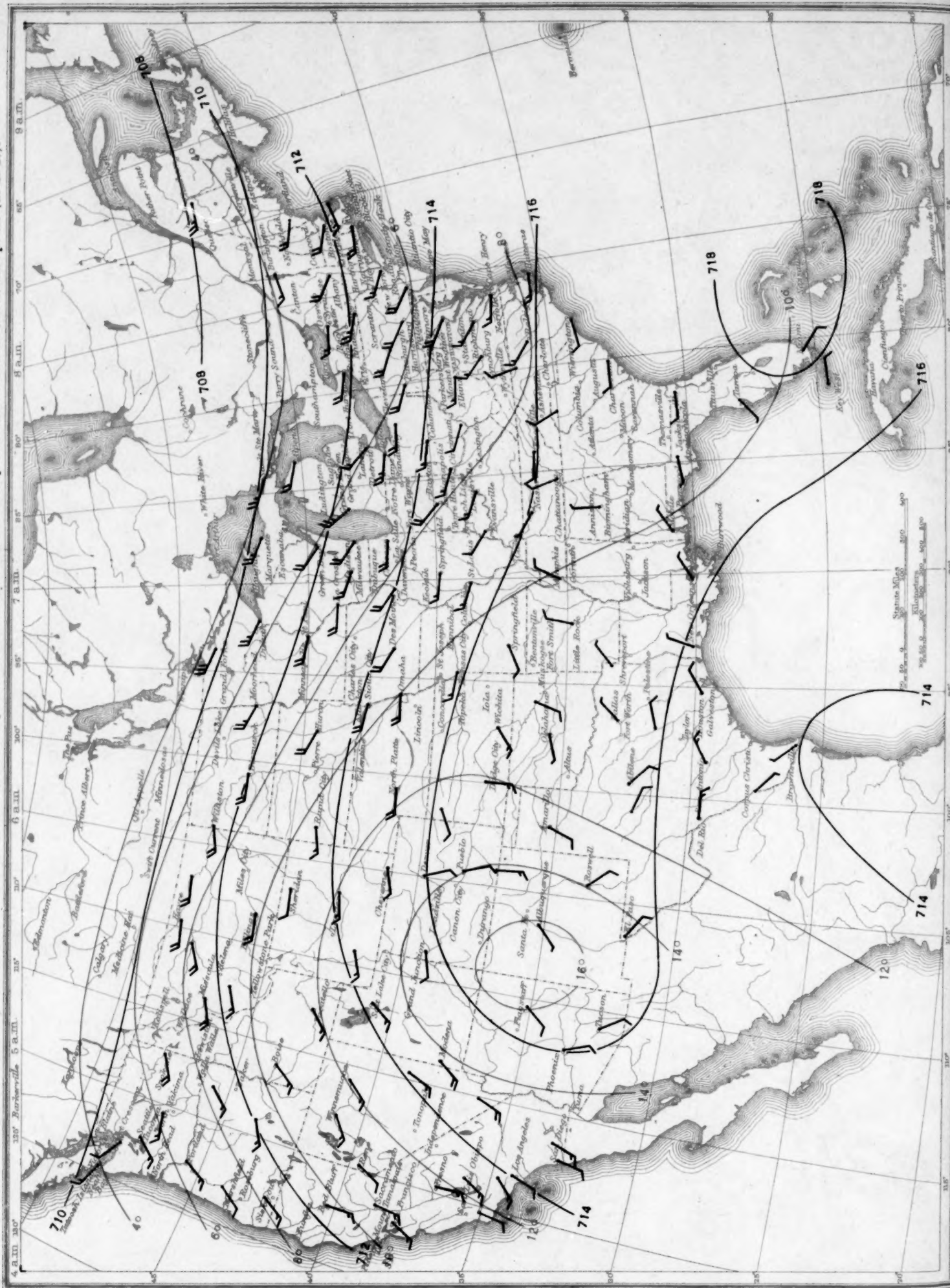


Chart X. Isobars (mb), Isotherms ($^{\circ}\text{C}$), and Resultant Winds for 5,000 Meters (m. s. l.) August 1945
 Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).

Chart X. Isobars (mb), Isotherms (°C.), and Resultant Winds for 5,000 Meters (m. s. l.) August 1945
Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).

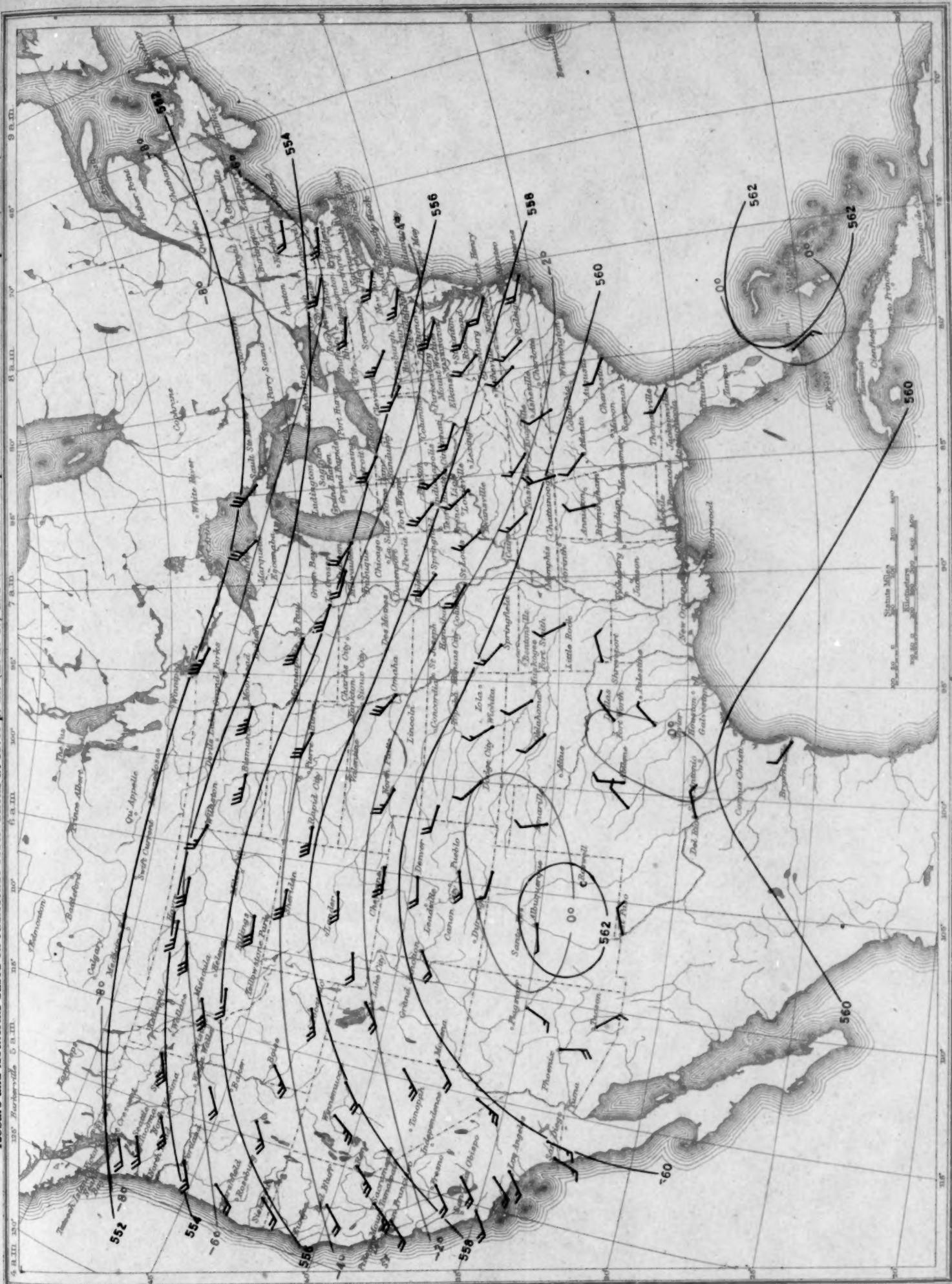


Chart XI. Isobars (mb), Isotherms ($^{\circ}\text{C}$), and Resultant Winds for 10,000 Meters (m. s. l.) August 1945
Isobars and isotherms based on radiosonde observations at 11:00 p. m. (E. S. T.) and winds based on pilot-balloon observations at 5:00 p. m. (E. S. T.).

